

DO WOMEN MISREPORT DOMESTIC VIOLENCE: EVIDENCE FROM
COUPLE DATA

A Master's Thesis

by

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Ankara
June 2019

To my family,



DO WOMEN MISREPORT DOMESTIC VIOLENCE: EVIDENCE FROM
COUPLE DATA

The Graduate School of Economics and Social Sciences
of
İhsan Doğramacı Bilkent University

by

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In Partial Fulfilment of the Requirements for the Degree of
MASTER OF ARTS

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ANKARA

June 2019

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Economics.



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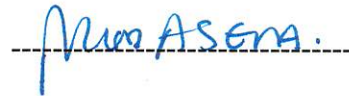
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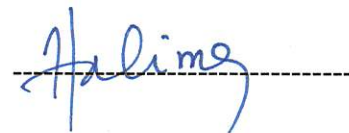
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ABSTRACT

DO WOMEN MISREPORT DOMESTIC VIOLENCE: EVIDENCE FROM COUPLE DATA

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The literature on domestic violence against women excessively employs survey data in which there is only women side of the violence. In this study by benefiting from a couple data, we use both men and women reporting of violence to understand if education has an impact on violence reporting. Common factors can affect violence reporting and endogeneity problem arises. This paper exploits an exogenous increase in mandatory years of schooling in Turkey to avoid endogeneity problem arises from education. The emphasis of the paper is on the connection between reporting violence behavior of couples and their education. Schooling reform increased junior high school completion rate by 10 ppt for married women and 16 ppt for married men in the sample. Increased schooling of women raises the probability of under-reporting psychological violence while it reduces the probability of over-reporting physical violence. Hence one should be careful inferring causal relations from one-partner data while studying on sensitive behaviors.

Keywords: Couple Data, Domestic Violence, Education, Reduced Form Regression, Reporting Bias

ÖZET

KADINLAR AİLE İÇİ ŞİDDETİ YANLIŞ MI BİLDİRİYOR: ÇİFT VERİSİ ÜZERİNDEN KANIT

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Haziran 2019

Aile içi şiddet üzerine yapılmış çalışmalar yoğunlukla sadece kadınları içeren anket verileri kullanmaktadır. Bu çalışmada hem erkek hem kadın tarafının cevaplarını içeren çift verisi kullanılarak eğitimin şiddeti bildirme üzerindeki etkisi araştırılmıştır. Şiddeti bildirmek bazı ortak etkenlerden etkilenebileceği için içsellik problemine sebep olabilir. Bu çalışmada Türkiye’deki zorunlu eğitim yılındaki dışsal değişimden yararlanarak eğitimden kaynaklanan içsellik probleminden kaçınılmıştır. Tez çiftlerin eğitimleri ve şiddet davranışlarını bildirmeleri arasındaki ilişkiyi vurgulamaktadır. Eğitim reformu, örnek gruptaki evli erkekler için ortaokulu bitirme oranını 16 yüzde puan, evli kadınlar için ise 10 yüzde puan arttırmıştır. Daha yüksek eğitimin kadınların psikolojik şiddeti eksik bildirmesine ihtimalini arttırırken, fiziksel şiddeti fazla bildirme ihtimalini düşürdüğü gözlenmiştir. Bu yüzden hassas davranışlar üzerine çalışanlar eğer tek eş verisi kullanıyorlarsa sebepsel çıkarımlar yaparken dikkat etmelidir.

Anahtar Kelimeler: Aile İçi Şiddet, Çift Verisi, Eğitim, İndirgenmiş Biçim Regresyonu, Yanlı Bildirme

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Violence against women has been a serious issue in most of the countries. One of the most common ways of being exposed to violence is from the husband or an intimate partner. According to the WHO (2013) almost one third of the women who had ever been in a relationship experienced violence from their intimate partner. According to DESA (2010), 40% of women in Turkey had experienced some form of intimate partner violence. Most of the studies benefit from survey data which only includes women reporting. Contribution of our study stems from our data. By employing a couple data which includes both sides' reporting, we show that it is the right resource to study violence because husband side of the story is at least as important as wife side. Education does not only affect women's behavior but also men's. We show how it affects reporting behavior of couples.

Violence causes negative consequences for the economy as a whole along with adverse health effects as per each influenced household. As a direct cost NISVS (2010) shows that violence against women costs \$8.3 billion in 2003 dollars. That cost comprises health care costs and other channels such as absenteeism from work and reduced productivity as a result of the physical and mental damage caused by violence. Besides there exist indirect costs that are mostly transferred to children. Con-

sequently children who witnessed violence at home show symptoms of behavioral problems and tend to have negative impact on their peers in classroom (Carrell & Hoekstra, 2010). Carrell and Hoekstra state that a troublesome student in a class of 25 during primary school can reduce the present discounted value of his peers' future gain by \$100,000, probably as a consequence of high-stake exams being a critical determinant of future jobs. While it has such massive costs for economy, it is very crucial to study on domestic violence by using a data which would not suffer from reporting bias.

The important role education plays in impeding violence against women is well established. Many studies continue to document mechanisms that bring about the negative correlation between the schooling years that a woman has and propensity to be exposed to violence. Negative relationship between schooling years and experiencing violence is established with several datasets for other countries (Ackerson et al., 2008; Vyas & Watts, 2009; Eswaran & Malhotra, 2011). The purpose of this study is to determine whether the marriage market outcome of women, is related to the physical and psychological violence that she experiences and how reporting consistency of couples is affected by the schooling of spouses. In the data, Turkish Statistical Institute-Family Structure Survey 2016, there is a significant effect of education on violence and this paper seeks if these results are consistent among wives and husbands. It is important to inspect what exactly determines this negative correlation and if these findings from single partner data are reliable to trust for policymakers who try to protect women against every sort of violence.

This paper's hypothesis is the following: education affects both sides' reporting behavior in a marriage and hence might cause response bias. Reporting discrepancies between men and women can be attributable to change in the perception of violence and caring about social acceptance. Since one cannot detect response-bias from one-partner data, findings from such studies can be biased.

Education can affect domestic violence in various ways: economic empowerment of women, altering conventional gender roles and attitudes and advancing the marriage prospects. Rockwell (1976) and Chadwick and Solon (2002) indicate that people tend to choose spouses from a pool of potential husbands and wives with same or higher schooling level and this decision leads to higher level of marriages and financial outcomes for the family (Becker, 1991). Oreopoulos and Salvanes (2011) emphasizes that education may induce women to refine their decisions regarding marriages and husband choices thus reducing exposure to domestic violence.

We investigate the effects of the aforementioned schooling reform in Turkey, which extends mandatory schooling for three years, yet the focal point of the analysis is the domestic violence outcomes and reporting differences between spouses. 1997 schooling reform authorized three more years of schooling for those who were born after January 1987. While students who were born before 1987 could drop out school with a primary school diplome after fifth grade, student who were born after 1987 had to continue their education until the completion of eighth grade and then had an option to drop out. In the literature schooling reform is mostly used as an instrument for education to avoid endogeneity problem (Abdurahimov & Akyol, 2018; Erten & Keskin, 2017; Cesur, Dursun & Mocan, 2018; Cesur & Dursun, 2016; Mocan, 2013).

We estimate the influence of 1997 compulsory schooling law by using 2016 Turkey's Family Structure Survey micro data set. We focus on the women who are married and living together with their husbands. The advantage of our dataset is that it includes both wives and husbands so that we can observe differences between reporting. As the reform affected education level of both, increased years of schooling can affect outcome variable through other channels. Thus assumption of exclusion restriction fails. Hence, for different outcomes and subsamples reduced form approach is adopted throughout the paper instead of instrumental variable method. With reduced form regressions I aim to uncover correlations and associations among variables by investigating signs and magnitudes of coefficients. The reduced form

method has a useful role for making conditional predictions of violence measures given the exogenous variation arising from the reform.

1997 schooling reform brings an exogenous variation in the schooling years, so junior high school completion is captured by the dummy of getting affected by the reform. Hence I use the variable “born after 1986” as the exogenous variable in the regressions instead of the junior high school completion dummy. Optimal bandwidth selection is based on the method of Imbens and Kalyanaraman algorithm (IK) and for the robustness checks, the alternative bandwidth selected according to Calonico, Cattaneo, Titiunik algorithm (CCT) (Imbens & Kalyanaraman (2012); Calonico, Cattaneo & Titiunik, 2014).

Firstly, we investigate the effect of the education reform on schooling outcomes. Next, we check if exogenous change in schooling affects violence related behavior of men towards their wives. As we have reports from both of the sides we can see the consistency of reporting among partners. We can also see that the increase in education of men has a positive impact on violence measures: physical violence, psychological violence and financial control. Henceforth we analyze impact of education from two different standpoints: husbands’ and wives’ perspectives. After these analyses, we investigate if there are discrepancies between these two sides’ reports and whether education has impacts on it.

Our results suggest that junior high school completion rate of women increased by 15.7 ppt, and junior high school completion rate of men increased by 12.6 ppt. Emphasis of the underlying paper is married women. In married women sample, junior high school completion rate increased by 9.4 ppt and for married men increase is 20.6 ppt. Contrary to the previous work, in the data and sample men are also significantly affected by the reform and especially married men had more positive effect than women. There is a significant jump in having at least junior high school degree between treatment and control groups (See Figure ??). These findings are strongly

significant and hence remark the importance of both partners' side of proceeding outcomes.

All the measures related to psychological and physical violence are based on reactions of couples during a fight or a dispute, such as: yelling, teasing, insulting, leaving the room/home, breaking wares, using physical force, separating beds and limiting spendings. We divide these variables into three groups: i) Financial control behavior which consists of limiting spendings; ii) Physical violence which consists of using physical force; iii) Psychological violence which consists of yelling, teasing and insulting. Following Duflo, Glennerster and Kremer (2007) and Kling, Liebman and Katz (2007), We construct indexes by averaging the z-scores of dummies of being exposed to the relevant classes of violence as robustness checks. These indexes is presented in Appendix Table 14. By utilizing the couple data we generate variables which indicate if a woman's report is different than her husband's. We separate these discrepancies as "Woman under-reports" and "Woman over-reports". While the former one is the case of woman not reporting violence, whereas her husband does, the latter one is the case in which woman reports violence whereas her husband does not.

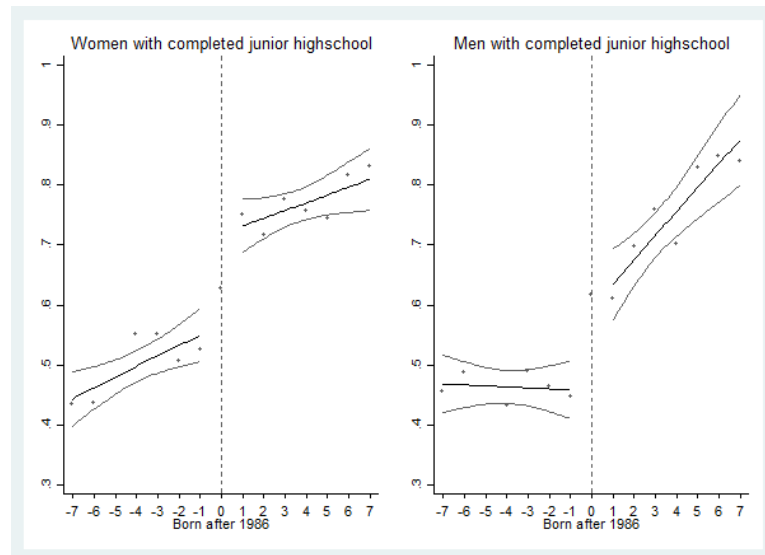


Figure 1: Treatment Effect on Junior High school Completion Rates by Gender in Married Sample

Following analyses are made in three different subsamples within the optimal band-

width: all married couples, couples in which wives are affected by the reform (W1) and couples in which none of the husbands were affected by the reform (M0). Our results suggest that, men with at least junior high school degree are 28.7 ppt less likely to report exerting physical violence against his wife compared to men without junior high school degree. Women report that psychological violence and financial control behavior of men decrease by 10.9 ppt and 18.4 ppt respectively. In any of the violence measures there is no consistency between spouses. This is the first signal for existence of response bias. Following violence regressions, we find that education significantly affects reporting of women. Women whose husbands were affected by the reform are 3 ppt less likely to under-report physical violence. Reform increases the propensity to under-report psychological violence by 8 ppt.

1.2 Literature Review

Effects of education on women's lives have been studied from numerous viewpoints. Research by Lleras-Muney (2005) supports that education decreases mortality through the mechanism that people with higher schooling years adopt new information and technology on health faster than those with less schooling years, Currie and Moretti (2003) find that higher maternal education improves infant health. Another positive effect of maternal education is that is the enhancement of cognitive ability of children (Murnane, 1981) and, as indicated by Lochner and Moretti (2003), education reduces the prevalence of crime and incarceration. Goldin (2002) states that college education makes marriage outcomes better for women and concludes that the essential aim of people who attend college in 1960s and 1970s was to attract higher educated men. In this study we investigate impacts of education on reporting violence.

This study mostly contributes to the literature of reporting problems in surveys. Response bias is a conventional termin for a range of propensities of participants to re-

spond unreliably or dishonestly to questionnaires. These biases are extensive in research involving participant self-reports, including structured interviews and surveys. Response biases pose a significant threat on the appropriateness of findings based on questionnaires or surveys (Furnham, 1986). The most important reason of response bias is the social desirability bias in which survey respondents possess tendencies to answer questionnaires to be perceived positively by others. Social desirability bias may occur as over-reporting “good behavior” or as under-reporting “bad,” or “undesirable” behavior. Tendencies for inaccurate reporting as such pose a serious obstacle when employing research methods including self-reports, especially questionnaires. This bias hinders the interpretation of actual tendencies and individual differences (Edwards, 1957).

The results of Szinovacz and Egley (1995) reveal considerable under-reporting of violence. Moreover, they find cases in which some predictors of violence are significantly related to under-reporting by one spouse. The relation among predictors of violence and under-reporting results in discrepancies between predictor models based on one-partner and couple scores of violence. Their findings, consequently, demonstrate that data collection method has a crucial impact on variables of violence reporting. They conclude that couple data provides a possibility to evaluate reporting bias effects on findings to some extent. In another paper, Szinovacz (1983) states that if the matrimonial status differs significantly among the spouses’ expectations or epitomes varies from what has been established in society as a “norm”, conscious distortions of reality may occur. The notion of the societal norm causes response bias for couples in survey data. The above mentioned trend is not only valid for reports of violent behaviors but also for their outcomes. Females are more prone to report injuries to themselves, even when both partners are abusive (Brush, 1990). There are other papers that show social desirability bias cause response bias in sensitive behavior surveys (Agüero & Frisancho, 2017; Anderson, 1997; Anderson & Sorensen, 1999; Kelly, et al., 2013).

Thus, couple data are a necessary tool to determine whether one or both spouses are responsible for under-reporting in severe violence illustrated in one-partner studies for the research on violence. Furthermore, couple data are needed to evaluate whether correlations between the explanatory variables and violence illustrated in research employing one-partner data are affected by selective under-reporting among couples. If variables such as violence are prone to under-reporting to significant extent, then relationships with other variables indicate not only the relationship between a specific variable and violence but also between this variable and individuals' tendency to misreport violence. In this study we show that education affects the reporting behavior, hence one should be careful while inferring from one-partner data about violence cannot be relied on.

In recent years, there has been other studies that exploit 1997 schooling reform in Turkey as the source of exogenous variation in educational attainment to estimate the causal effect of three more years of schooling after primary school in various outcomes such as on domestic violence (Abdurahimov & Akyol, 2018; Erten & Keskin, 2017), health indicators (Cesur, Dursun & Mocan, 2018), happiness (Cesur & Dursun, 2016), wages (Mocan, 2013), teenage fertility and gender inequality (Dinçer, Kaushal & Grossman, 2014; Güneş, 2016), gender gap in educational attainment (Kırdar, Dayıoğlu & Koç, 2014) and children's schooling on their mothers' attitudes towards domestic violence (Gulesci, Meyersson & Trommlerová, 2019). In this study by exploiting the same reform, we find that when women are exposed to the reform they are more likely to under-report psychological violence and man are less likely to report that they exert physical violence. We observe that inconsistencies among partners increase with more schooling.

1.3 1997 Basic Education Reform

Since the establishment of the Republic of Turkey in 1923, regulation of education policies and structural reforms are executed by the Ministry of National Education.

Until 1997, mandatory schooling only consisted of five years of primary education. Upon completion of primary school, students were awarded a diplome and had three possible options: (i) dropping out of school; (ii) continuing studies in traditional middle schools for three more years; and (iii) continuing studies in vocational middle schools, along with regional schools which aimed to raise religious clerics. Turkey's laws reinforced that education must be implemented completely in Turkish and wearing headscarf was abolished. However, religious schools did not comply with the latter condition.

During 1990s, political Islam started to attain vast support from people and eventually the Islamist party won an election in 1995 which led to escalation of the conflict between Islamic movement and secular groups consistent of judiciary and military forces. Second group reprehended the inadequacy of enforcement of law in religious schools and centers, which eventually prompted military to intervene with the memorandum in 1997 in which the Islamist party leader and his coalition were forced to resign.

In this memorandum a set of decisions, to avert the spread of Islam in Turkey, were announced by National Security Council on February 28, 1997. An educational reform was also contained in these decision sets. Mandatory years of schooling were increased from 5 years to 8 years only in secular schools and, vocational and religious secondary schools were closed. Afterwards, on August 18, 1997, Law No. 4306 was passed by Turkish parliament, according to which compulsory schooling years were increased to 8 years so that primary school and junior high school were brought together under the primary education component of Turkey's system of edu-

cation. This reform did not include any changes in the curriculum and content of the courses. It was only to increase the schooling of student population with low propensity for schooling beyond the amount mandated by law. Also the diplome awarded at the end of the fifth grade was abolished and replaced with the diplome for completing eighth grade to promote the junior high school completion (Dulger, 2004).

1997 Schooling reform became effective for 1997-1998 schooling year. According to that a student who completed fifth grade in 1997 could drop out of school while a student who completed fourth grade in 1997 could not drop out and had to continue studying in junior high school for three more years. Turkish law declares that if a child is 72 months old at the end of the calendar year, he/she can start first grade in that Fall. Hence a child who was born before January 1, 1987 was exempt from the schooling reform, and for those who were born after that date had to complete eighth grade. However since that rule was not strictly followed there was an imperfect compliance, imperfect compliance occurred in the following: a child who was born in the first months of 1987 could start first grade in 1992 and be exempt yet a child who was born in the last months of 1986 could start first grade in 1993 and be subject to the reform (Cesur and Mocan, 2013 and Dursun, Cesur & Kelly 2017).

Furthermore, together with legal regulations, financial investments had been done to enable the new scale of education. To hasten the construction, to recruit 70,000 new teachers and to provide new school materials, the government allocated \$2 billion more than expected in its development plan in the first four years of the program. Approximately 104,000 new classrooms were built to constitute additional capacity for more than three million basic education students (Dulger, 2004). According to technical report of Ministry of Education in 2011, enrollment rate of primary school in 1999-2000 academic year increased to 93.54 from 84.74 in 1997-1998 and increase in enrollment rate than for females. was greater than males.

CHAPTER 2

DATA AND EMPIRICAL METHODOLOGY

2.1 Data

In this study, we use 2016 Turkey's Family Structure Survey micro data set which was conducted by Turkish Statistical Institute in cooperation with Ministry of Family and Social Policies. Sample contains 17,239 households presenting Turkey's estimates, amounting to 35,475 individuals aged 15 and over. The survey was conducted between 1 June - 26 September 2016 within the scope of the protocol made between Turkish Statistical Institute and Ministry of Family and Social Policies. The micro data were prepared in accordance with the regulation named "Regulation of Procedure and Principles of Data Confidentiality and Confidential Data Security in Official Statistics" which was issued by the Article 13 of Statistics Law of Turkey No: 5429 to ensure the safety of interviewee and interviewer. Surveys were administered through visiting households at their residence and interviews in a face to face manner. Since survey questionnaire includes sensitive questions regarding violence and sexual behavior, married couples were surveyed in different rooms.

This survey is conducted with the intent of determining the structure of families and life styles of individuals in the family environment along with value judgments of family members, also including personal features such as gender, education, beliefs, habits, working status and marital status. The focal point in this data is the observa-

tions related to quality of marriage and variables that explain the frequency of physical and psychological violence women are exposed to.

All the measures related to psychological and physical violence are based on reactions of couples during a fight or a dispute, such as: yelling, teasing, insulting, leaving the room/home, breaking wares, using physical force, separating beds and limiting spendings. I divide these variables into three groups: i) *financial control behavior* which consists of limiting spendings; ii) *physical violence* which consists of using physical force and finally iii) *psychological violence* which consists of yelling, teasing, insulting. This classification abides within established Turkish Statistical Institute's categorization. To capture each dimension of these reactions and all other measures, z-scores of the variables are constructed and results are shown in Appendix Table 14.

Throughout the paper analyses are made in three different samples. First sample corresponds to all married couples within the optimal bandwidth. Second sample corresponds to couples in which all wives were affected by reform. Here since there is only variation in husbands' state of getting affected by the reform, one can infer the effects of men's education on marriage and violence outcomes. Third sample corresponds to couples in which none of the husbands was affected by the reform. In this subsample only variation source is women's state of getting affected by the reform, hence one can analyze how aforementioned outcomes are affected by education of women.

Table 1 reports summary statistics for 23-37-year-old women. It presents the difference of characteristics between treatment and control group which are people who were born after and before 1986 respectively. Columns (1) and (2) present means, standard deviations and the number of observations for women who are in the treatment group and the control group respectively. Column (3) shows the differences between columns (1) and (2). We first demonstrate outcomes on schooling indexes.

In Turkey, if one refers to division over educational level statistics, one can see that there is a small significant difference between samples in primary school completion rate. For junior high school completion, participation percentage is 75% for treatment group and 50% for control group, which constitutes a statistically significant difference. This discrepancy indicates that reform had an important impact on treatment group. There are also small differences in high school and college completion rates.

Next, Table 1 lists the results for summary statistics on domestic violence indices. Each of the violence indices is represented by a dummy variable that indicates experience of an abuse act under abovementioned relevant classes of violence. Each index is split into women and men's reports. There is statistically significant difference in men's reporting of psychological violence. On average, men in control group are more likely to report psychological violence and while reports of physical and financial violences do not differ much between genders psychological violence is reported by a bigger proportion of men.

Afterwards, Table 1 demonstrates the proportions of agreement on reporting violence measures. Agreement is defined as couple reporting consistently, both reports that there is violence or both reports that there is not. Although more than 90 percent of couples report the same for financial control behavior and physical behavior, agreement rate for psychological violence is much lower, 76 percent. This is an indicator for significant misreporting behavior. We also observe that control group is slightly has more agreement for reporting psychological and physical violence.

Table 1 presents summary statistics for partner characteristics for both groups. The data corresponds only to last partners of the respondents. Marriage age is around 21 years in both of the groups. Husband's junior high school completion rate is estimated to be 75 percent for treatment and 64 percent for control group. There is statistically significant difference between the groups. There does not exist large differ-

Table 1: Summary Statistics for 23-37 Year Old Women by Treatment Status

VARIABLES	Sample		Difference (1)-(2)
	Treatment	Control	
	(1)	(2)	
	Mean (SD) Obs	Mean (SD) Obs	
Schooling indexes			
Junior Highschool Completion	0.75	0.50	0.25***
	(0.43)	(0.50)	(0.02)
	940	1,765	
Highschool Completion	0.42	0.39	0.03
	(0.49)	(0.49)	(0.02)
	940	1,765	
Primary School Completion	0.86	0.92	-0.06***
	(0.35)	(0.27)	(0.01)
	940	1,765	
College Completion	0.12	0.15	-0.04***
	(0.32)	(0.36)	(0.01)
	940	1,765	
Domestic Violence Index			
Physical Violence			
<i>Women's report</i>	0.04	0.05	-0.01
	(0.20)	(0.21)	(0.01)
	940	1,765	
<i>Men's report</i>	0.04	0.03	0.01
	(0.20)	(0.18)	(0.01)
	940	1,765	
Psychological Violence			
<i>Women's report</i>	0.72	0.74	-0.03
	(0.45)	(0.44)	(0.02)
	940	1,765	
<i>Men's report</i>	0.79	0.82	-0.03*
	(0.40)	(0.38)	(0.02)
Financial Violence			
<i>Women's report</i>	940	1,765	
	0.06	0.07	-0.01
	(0.24)	(0.26)	(0.01)
<i>Men's report</i>	940	1,765	
	0.07	0.07	0.00
	(0.25)	(0.26)	(0.01)
	940	1,765	

Continued on next page

Table 1 - Continued from previous page

Proportions of agreement on reporting			
Agreement on reporting physical violence	0.93 (0.26) 940	0.94 (0.24) 1,765	-0.01 (0.01)
Agreement on reporting psychological violence	0.74 (0.44) 940	0.76 (0.42) 1,765	-0.02 (0.02)
Agreement on reporting financial control behavior	0.90 (0.30) 940	0.90 (0.30) 1,765	0.00 (0.01)
Partner and Relationship Characteristics			
Marriage Age	20.70 (3.08) 940	21.69 (4.19) 1,765	-0.99*** (0.14)
Husband's junior high school completion	0.75 (0.43) 940	0.64 (0.48) 1,765	0.11*** (0.02)
Husband's high school completion	0.54 (0.50) 940	0.52 (0.50) 1,765	0.02 (0.02)
Husband's college completion	0.18 (0.38) 940	0.20 (0.40) 1,765	-0.03* (0.02)

Continued on next page

Table 1 - Continued from previous page

Background Characteristics			
Raised in rural area	0.59 (0.49) 940	0.62 (0.49) 1,765	-0.02 (0.02)
Raised in region 1	0.11 (0.32) 940	0.10 (0.30) 1,765	0.02 (0.01)
Raised in region 2	0.03 (0.17) 940	0.05 (0.23) 1,765	-0.02*** (0.01)
Raised in region 3	0.11 (0.31) 940	0.12 (0.33) 1,765	-0.02 (0.01)
Raised in region 4	0.06 (0.24) 940	0.08 (0.27) 1,765	-0.02* (0.01)
Raised in region 5	0.12 (0.32) 940	0.11 (0.32) 1,765	0.01 (0.01)
Raised in region 6	0.13 (0.33) 940	0.12 (0.32) 1,765	0.01 (0.01)
Raised in region 7	0.09 (0.29) 940	0.08 (0.28) 1,765	0.01 (0.01)
Raised in region 8	0.07 (0.26) 940	0.07 (0.26) 1,765	0.00 (0.01)
Raised in region 9	0.04 (0.20) 940	0.04 (0.19) 1,765	0.00 (0.01)
Raised in region 10	0.05 (0.22) 940	0.05 (0.21) 1,765	0.00 (0.01)
Raised in region 11	0.06 (0.24) 940	0.06 (0.24) 1,765	0.00 (0.01)
Raised in region 12	0.12 (0.32) 940	0.11 (0.31) 1,765	0.01 (0.01)

Data are from 2016 Turkey's Family Structure Survey. Column (1) lists the means, standard deviations and observations of variables drawn from the treatment group. Column (2) lists the same drawn from the control group. Column (3) presents the difference between the two samples. Bandwidth is 7.

ences in other education groups.

Finally Table 1 indicates that there does not exist significant differences in regional background characteristics between treatment and control groups. This finding suggests that our results are not driven by other differences than state of being affected by the reform.

As there is no perfect compliance to the educational registration system, one cannot detect treatment status of people who were born in 1986. As in Cesur and Mocan (2013), 1986 cohort is dropped from the analysis. Moreover, individual observations without childhood region are also dropped from the sample. In Appendix Table 9 shows the difference of characteristics between the whole sample and the sample without missing points that I use for analysis. Columns (1) and (2) present means, standard deviations and the number of observations for women who are in the sample without missing points, and whole sample respectively. Column (3) shows the differences between columns (1) and (2). We observe that in any of important variables there is no crucial differences between the unrestricted sample and restricted sample in which there is no observations with missing points.

2.2 Empirical Methodology

We aim to investigate the relationship between education and violence reporting. There are multiple factors that affect the relationship between education and violence outcomes which complicate correlation inferences and causation analysis. As the law increased mandatory years of schooling from 5 years to 8 years regardless of what group or gender an individual pertains to and preferences of students, as long as students were born after 1986, they were affected by the reform. The other advantage of the reform set-up stems from the impact that was made only towards schooling years. It has no further direct effects on any other variable, there was no change in the curriculum and in the system of teaching (Dulger, 2004) and since it was a po-

litical decision via military enforcement, there were no grounds to expect such an enforcement earlier and manipulate the outcomes.

Schooling reform in 1997 is used as an exogenous variable for education of men and women for the purposes of ruling out endogeneity and joint determination problems and other troublesome factors that could create potential bias in the estimates. The mostly used method in the literature is Instrumental Variable (IV) technique. However IV technique is not used due to the fact that being affected by the reform can affect violence and other measures through unobserved variables other than education. It is shown that one's treatment state can also affect his/her spouse's educational attainment. As a consequence of this relationship, assortative mating, one's outcomes can be influenced through his/her spouse's education. IV method would not be an effective tool given the relationship caused by the assortative mating which violates the exclusion restriction assumption.

Hence, to investigate the relationship between education and outcomes, reduced form regressions are applied. The exogenous change in mandatory years of schooling is used as primary means for analyses. With reduced form regressions we aim to uncover correlations and associations among variables by investigating signs and magnitudes of coefficients. The reduced form equations present a useful tool to form conditional predictions of violence measures within exogenous variations the reform provides. That methodology also allows for non-detailed specification of relevant interdependencies within variables.

To afford using the 1997 Schooling Reform as the key explanatory variable and to see the effects of education on domestic violence, at first we run OLS regressions for both genders to see if reform had a significant impact on junior high school completion rate.

$$JHS^i = \beta_0 + \beta_1 after1986^W + \beta_2 after1986^M + \beta_3 Z^i \quad (2.1)$$

where $after1986^W$ and $after1986^M$ are the treatment status of a wife and a hus-

band respectively, and Z_i is the vector of control variables: decentralized age and its square, childhood region, raised in rural dummy and interaction of the last two variables. For the samples where all of the wives were affected by the reform (W1) and none of the husbands was affected by the reform (M0) the following specifications are made to see the effect of only one side's reform status on both sides' educational attainment:

$$JHS^i = \alpha_0 + \alpha_1 after1986^W + \alpha_2 Z^i \quad (2.2)$$

$$JHS^i = \gamma_0 + \gamma_1 after1986^M + \gamma_2 Z^i \quad (2.3)$$

Results for the effect of reform on junior high school completion rate allow one to use treatment status of reform instead of education.

After the first step, to see the effects of three more years of mandatory schooling, we make reduced form regressions for several outcomes such as violence, over- and under-reporting dummies in a general sample.

$$Y^i = \beta_0 + \beta_1 after1986^W + \beta_2 after1986^M + \beta_3 Z^i + \beta_4 Z^{-i} \quad (2.4)$$

where Z^{-i} is the control variable for individual i 's spouse. Control variables for the spouse are added to cover the effects of one's spouse's features. For the sample W1 and M0 following empirical specifications are applied respectively:

$$Y^i = \alpha_0 + \alpha_1 after1986^W + \alpha_2 Z^i + \alpha_3 Z^{-i} \quad (2.5)$$

$$Y^i = \gamma_0 + \gamma_1 after1986^M + \gamma_2 Z^i + \gamma_3 Z^{-i} \quad (2.6)$$

where Y_i is the outcome variables. In all regressions these observed variables are con-

trolled.

We make optimal bandwidth calculations following Imbens and Kalyanaraman algorithm (IK) (Imbens and Kalyanaraman, 2012) and for robustness check Calonico, Cattaneo, Titiunik algorithm (CCT) (Calonico et al., 2014) is followed.

Cameron and Trivedi (2005) state that in most of the survey data the assumption of independence of sampled observations does not hold mainly due to the use of clustered samples to decrease the costs. Hence, to eliminate the unobserved effect common to all households in a region, standard errors are clustered at decentralized age groups and for robustness check, standard errors are clustered at 26 regions level of Turkey. Besides, in all regressions 26 childhood region and having grown up in a village is presented as interactive dummies.

CHAPTER 3

MAIN RESULTS

3.1 Schooling Outcomes

To examine the effects of schooling on violence and reporting outcomes through the exogenous variation arises from schooling reform, firstly it needs to be checked that schooling reform significantly affects the schooling. Table 2 reports the schooling effect of the reform on the sample of all men and women and on the subsample of married men and women. We perform OLS regressions using a dummy variable which takes “1” if the respondent completed junior high school as dependent variable while controlling for the age and its square, region fixed effects, a dummy variable which takes “1” if respondent was raised in a village and the interaction of last two. Bandwidth 7 is chosen according to IK method and for the robustness checks half of it, bandwidth 4, is added to appendix (see Table 10).

Table 2 results suggest that reform had a significant impact on the schooling of men and women in all married couple and all sample. Junior high school completion of women increased by 9.4 ppt and 15.7 ppt respectively. For men it increased by 16.4 ppt and 12.6 ppt respectively. In the subsample M0, women being affected by the reform increases both of the side’s junior high school completion rate, which is an evidence for assortative mating. These results assure the significant effect of schooling reform on all sample within the optimal bandwidth. For robustness, same analyses

Table 2: Treatment Effects on Schooling

	(1)		(2)	(3)	(4)
Outcome	All Sample		Sample: M0	Sample: W1	
	w_after1986	m_after1986	w_after1986	m_after1986	Bandwidth
Panel A: All Sample					
Women's Junior High School Completion	0.157*** (0.024)	-	-	-	7
Men's Junior High School Completion	-	0.126*** (0.014)	-	-	7
Observations	5,134	3,910	-	-	
Panel B: All Married Couples					
Women's Junior High School Completion	0.094*** (0.025)	0.084** (0.034)	0.095*** (0.029)	0.067 (0.041)	7
Men's Junior High School Completion	0.069*** (0.022)	0.161*** (0.031)	0.089*** (0.019)	0.170*** (0.036)	7
Observations		2,705	2,313	940	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

*** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by decentralized age

are done within half of the optimal bandwidth. Appendix Table 10 shows that magnitudes and significance of coefficients are close. Our estimates are consistent with the previous works in terms of increase in women's education (Erten & Keskin, 2018; Gulesci & Meyersson, 2012). These findings demonstrate that both genders are beneficiaries of the reform. Figure ?? also demonstrates the effect of reform on junior high school completion of both genders

3.2 Violence Outcomes

In this section we inspect the effects of increased years of schooling on violence measures: physical violence, psychological violence and financial control behavior. We use dummies of men committing abovementioned violence types as dependent variables while using reform status as exogenous explanatory variable. We include individual's decentralized age and its square to capture year fixed effects along with its quadratic trend, childhood region and dummy variable for being raised in rural area along with the interactions of both to capture region fixed effects.

Table 3 presents the reduced form regression estimates of the violence outcomes.

Column (1) reports the outcomes for all married couples, column (2) and (3) report estimates from subsamples M0 and W1 respectively and column (4) specifies the bandwidth decided following IK and CCT methods. Standard errors are indicated inside the parentheses below the point estimates.

Table 3: Effects of Reform on Domestic Violence Reportings by Gender

	(1)		(2)	(3)	(4)
Outcome	All Sample w_after1986	m_after1986	Sample: M0 w_after1986	Sample: W1 m_after1986	Bandwidth
Panel A: Women Reporting					
Physical Violence	0.002 (0.060)	0.069 (0.075)	0.011 (0.020)	0.008 (0.022)	7
Psychological Violence	-0.109** (0.040)	-0.009 (0.050)	-0.064*** (0.016)	-0.071** (0.022)	7
Financial Control Behavior	-0.184*** (0.045)	0.001 (0.077)	-0.010 (0.017)	-0.013 (0.020)	7
Observations	2705		2313	940	
Panel B: Men Reporting					
Physical Violence	0.044 (0.089)	-0.137** (0.060)	-0.071 (0.017)	-0.026 (0.020)	7
Psychological Violence	-0.017 (0.033)	0.070** (0.052)	-0.028 (0.031)	0.084* (0.041)	7
Financial Control Behavior	0.053 (0.121)	-0.023 (0.132)	0.002 (0.035)	-0.025 (0.044)	7
Observations	2705		2313	940	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

*** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by decentralized age

In column (1) results provide evidence on the impact of schooling for both genders' violence reporting. Being affected by the reform decreases women's propensity of reporting that she experienced psychological violence by 10.9 ppt and financial control behavior by 18.4 ppt. Even though women being affected by the reform significantly affects their violence reports, men do not consistently report in the same direction in any of the violence types. Men who were affected by the reform report that they are 13.7 ppt less likely to exert physical violence and 7 ppt more likely to commit psychological violence. It's not only inconsistent but also they report in exactly the opposite direction for the psychological violence.

In column (2) and (3) while there is no consistency between both sides' report again

they report in the opposite way for psychological violence in the W1 sample in which the variation comes from men's state of being affected by the reform. This gives a hint about the source of inconsistency.

One crucial point to state is the directions. While women report that they experience less psychological violence their husbands differ in that. This discrepancy can be attributable to the response bias as a result of social acceptance motive of men. Women state that there is no change in the physical violence depending on education of any sides, men who got more schooling claims they are less likely to commit physical violence. The reason of this attitude can be that with more schooling men realize beating their wives is socially unacceptable behavior and instead they manipulate their actions as if it is "psychological violence".

For robustness checks in Appendix section Table 11 shows that when the bandwidth is equal to 4, even under some outcomes variables lose significance, direction of coefficients are always as in Table 3. Completely parallel results are yield when standard errors are clustered by 26 childhood regions of individuals in Table 13. For physical violence when outcomes are taken as z-scores of violence dummies, again even though magnitudes and significance change, directions are all same which can be seen in Appendix Table 14.

3.3 Reporting Behavior Outcomes

Next, we analyze if education has a direct effect on reporting behavior. We separate discrepancies of reporting as "Woman under-reports" and "Woman over-reports" such as: These two cases are equivalent with "Men over-reports" and "Men under-reports" respectively.

Results in Table 4 suggests that education has an impact on reporting behavior.

Women whose husbands were affected by the reform are 3.2 ppt less likely to under-

Table 4: Effects of Reform on Reporting Behavior

	(1)		(2)	(3)	(4)
Outcome	All Sample		Sample: M0	Sample: W1	Bandwidth
	w_after1986	m_after1986	w_after1986	m_after1986	
Women Under- Over-Reporting					
Underreporting Physical Violence	0.003 (0.012)	-0.032** (0.015)	-0.002 (0.015)	-0.034* (0.020)	7
Overreporting Physical Violence	0.003 (0.017)	0.019 (0.018)	0.012 (0.021)	-0.002 (0.023)	7
Underreporting Psychological Violence	0.074** (0.030)	0.078** (0.032)	0.063* (0.036)	0.131*** (0.042)	7
Overreporting Psychological Violence	0.015 (0.026)	-0.031 (0.029)	0.036 (0.026)	-0.014 (0.040)	7
Underreporting Financial Control Behavior	0.017 (0.018)	-0.016 (0.025)	0.006 (0.024)	-0.032 (0.035)	7
Overreporting Financial Control Behavior	-0.018 (0.019)	-0.008 (0.021)	-0.007 (0.022)	-0.018 (0.031)	7
Observations	2705		2313	940	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

*** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by decentralized age

report physical violence. Hence that can be the underlying reason for the inconsistency between reporting of wives and husbands in physical violence. Results for reporting psychological violence are stronger. Both side's education increases women's propensity to under-report or men's propensity to over-report psychological violence. This is the explaining factor for the difference in reporting psychological violence. Two other samples have similar results.

We could not find any significant effect of education on reporting financial control behavior. Hence the reason of discrepancy in this reporting cannot be explained with more years of schooling.

CHAPTER 4

ROBUSTNESS

In addition to the reduced form analyses, multinomial logit regression is also examined to strengthen the results. By reason of that our model has more than two reporting groups, multinomial logit is a useful tool to compare the probabilities of being in a certain group against being in the base group (For groups, see Table 5).

Table 5: Report Group

woman reports	1	1	0	0
man reports	1	0	1	0
report group	1	2	3	4

“woman reports = 1 if woman reports that she is exposed to violence” and “man reports = 1 if man reports that he commits violence”. As the most crowded group is Group 4, where none of the sides report violence, it is taken as the base group to compare:

$$\log\left[\frac{p_{ij}}{p_{i4}}\right] = \gamma_0 + \gamma_1 after1986^w + \gamma_2 after1986^m + \gamma_3 Z_{ij} + \gamma_4 Z_{-ij} + \varepsilon_{ij} \quad (4.1)$$

where p_{ij} represents the probability of couple i being in group $j \in \{1, 2, 3\}$.

Table 6 suggests that, by husband being affected by the reform, multinomial log-odds for being in group 3 to being in group 4 in physical violence reporting would be expected to decrease by 0.97 unit while holding all other variables in the model con-

Table 6: Multinomial Logit Results

		(1)		(2)	(3)	(4)
Outcome		All Sample		Sample: M0	Sample W1	Bandwidth
		w_after1986	m_after1986	w_after1986	m_after1986	
Violence Type	Report Group					
Physical Violence	1	-0.764 (1.307)	0.767 (1.403)	-0.967 (1.491)	3.316 (0.000)	7
	2	0.166 (0.499)	0.553 (0.517)	0.488 (0.613)	-0.544 (0.000)	
	3	0.045 (0.461)	-0.971* (0.524)	0.107 (0.489)	-0.635 (0.000)	
Psychological Violence	1	-0.160 (0.270)	0.329 (0.308)	-0.068 (0.326)	0.811 (0.583)	7
	2	0.180 (0.440)	-0.068 (0.468)	0.558 (0.471)	1.434** (0.713)	
	3	0.455 (0.310)	0.776** (0.343)	0.562 (0.375)	1.657** (0.647)	
Financial Control Behavior	1	-0.843 (0.855)	-0.843 (0.855)	0.075 (1.071)	-1.654 (0.000)	7
	2	-0.307 (0.385)	-0.307 (0.385)	-0.028 (0.430)	-0.852 (0.000)	
	3	0.436 (0.373)	0.436 (0.373)	0.299 (0.468)	0.010 (0.000)	
Observations		2705		2313	940	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

*** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by decentralized age

stant. That means log-odds of women underreporting physical violence decreases.

That result confirms reduced form analysis.

For psychological violence being in the treatment group, increases the probability of being in the group 3 for psychological violence. That means women whose husbands were affected by the reform are more likely to underreport psychological violence.

This again assures our results.

For robustness check of multinomial logit analysis, same regression is run within half of the optimal bandwidth. Results in Table 12 suggests that coefficients are all in the same directions and magnitudes comparing to 6.

For robustness checks we make placebo tests for all regression analyses (1)-(6). It is to eliminate any possibility of systematic relationship between outcome variables and age which could drive the results above. Instead of cohort who were born in 1986, cutoff year is taken as 1983. Figure ?? reveals the placebo treatment effect.

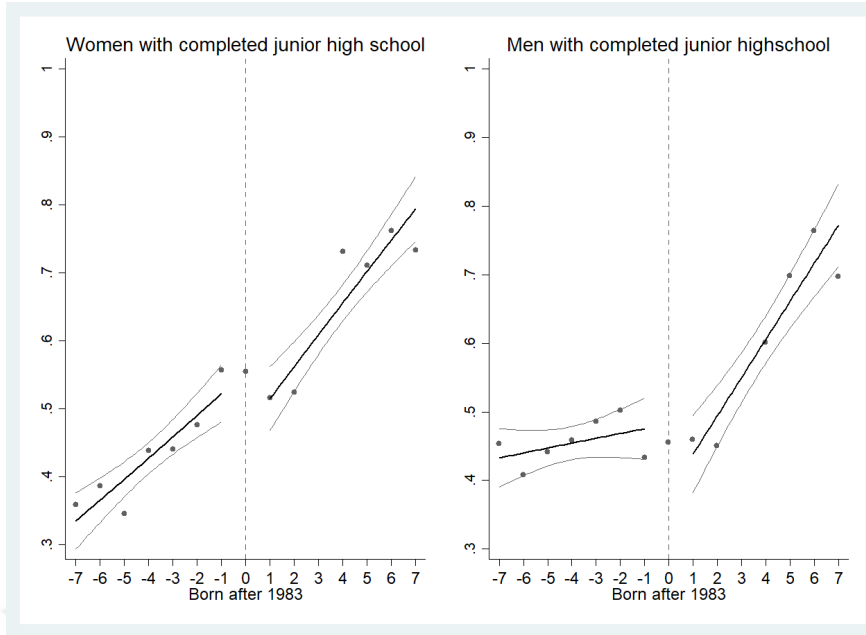


Figure 2: Placebo Treatment Effect on Junior High school Completion Rates by Gender

There does not exist any discontinuity around the cutoff year 1983. This result confirms that it is 1997 educational reform that drives results above. There is no random trend between the age and junior high school completion.

Besides we run all other regressions above according to new placebo treatment. Instead of $after1986^i$, $after1983^i$ is used as the explanatory variable.

Table 7: Placebo Treatment Effect

Outcome	(1)		(2)	(3)	(4)
	All Sample w_after1983	m_after1983	Sample: M0 w_after1983	Sample: W1 m_after1983	Bandwidth
Panel A: All Sample					
Women's Junior High School Completion	-0.052 (0.044)	-	-	-	7
Men's Junior High School Completion	-	0.008 (0.045)	-	-	7
Observations	5,491	4,192	-	-	
Panel B: All Married Couples					
Women's Junior High School Completion	0.003 (0.039)	0.036 (0.046)	0.035 (0.038)	0.062 (0.067)	7
Men's Junior High School Completion	-0.074* (0.037)	-0.071*** (0.026)	0.035 (0.025)	-0.149*** (0.040)	7
Observations	3208		2433	1451	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Standard errors are clustered by decentralized age

Table 7 indicates that placebo reform does not have any significant effect on schooling in the positive direction. This is a strengthening fact to confirm that our results are not manipulated by other trends.

Table 8: Placebo Reduced Form Results

	(1)		(2)	(3)	(4)
Outcome	All Sample w_after1986	m_after1986	Sample: M0 w_after1986	Sample: W1 m_after1986	Bandwidth
Panel A: Women Reporting					
Physical Violence	0.008 (0.014)	0.018 (0.018)	0.006 (0.016)	0.007 (0.022)	7
Psychological Violence	0.018 (0.030)	0.012 (0.032)	0.003 (0.037)	0.046 (0.037)	7
Financial Control Behavior	0.005 (0.017)	0.009 (0.020)	0.014 (0.021)	0.011 (0.025)	7
Observations	3,152		2,504	1,142	
Panel B: Men Reporting					
Physical Violence	0.000 (0.013)	-0.004 (0.017)	-0.007 (0.016)	0.003 (0.020)	7
Psychological Violence	0.016 (0.028)	0.011 (0.033)	0.041 (0.032)	0.011 (0.041)	7
Financial Control Behavior	0.012 (0.016)	0.002 (0.022)	0.008 (0.020)	0.009 (0.028)	7
Observations	3,152		2,504	1,142	
Panel C: Women Under- Over-Reporting					
Underreporting Physical Violence	-0.002 (0.011)	-0.010 (0.015)	-0.009 (0.014)	-0.003 (0.018)	7
Overreporting Physical Violence	0.006 (0.013)	0.013 (0.016)	0.004 (0.016)	0.001 (0.019)	7
	3,152		2,504	1,142	
Underreporting Psychological Violence	-0.008 (0.023)	-0.004 (0.027)	0.015 (0.027)	-0.046 (0.034)	7
Overreporting Psychological Violence	-0.007 (0.019)	-0.003 (0.022)	-0.024 (0.021)	-0.011 (0.025)	7
	3,152		2,504	1,142	
Underreporting Financial Control Behavior	0.006 (0.012)	-0.002 (0.019)	-0.004 (0.013)	0.002 (0.022)	7
Overreporting Financial Control Behavior	-0.002 (0.015)	0.005 (0.017)	0.002 (0.018)	0.005 (0.021)	7
Observations	3,152		2,504	1,142	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

*** p<0.01, ** p<0.05, * p<0.1

Standard errors are clustered by decentralized age

Results in Table 8 suggests that there is no significant effect of this hypothetical reform on any of the outcomes. Hence it is plausible to state that our results are truly driven by the schooling reform which took place in 1997.

CHAPTER 5

CONCLUSION

Previous studies show that domestic violence costs more than \$8 billion. Hence it is crucial for policymakers to understand reasons and motives behind domestic violence. Current literature on domestic violence against women excessively employs survey data in which there is only women side of reporting. In this study, the goal is to investigate the effects of education on violence reporting of men and women. By employing a couple data we detect discrepancies between wife and husband reporting and find that discrepancy in psychological violence reporting is driven by education.

According to our results schooling reform increased junior high school completion rate by 10 ppt for married women and 16 ppt for married men. Women who were affected by the reform report that they experience 11 ppt less psychological violence and 18 ppt less financial restriction. Our findings also indicate a 14 ppt decrease in physical violence reporting and 7 ppt increase in psychological violence reporting of men. We do not observe any consistency in any of the violence measures.

Even though there is a significant effect of education on violence outcomes, by using a couple data which includes responses of both sides we show that there exist inconsistencies among responses of spouses. The key finding is that these discrepancies are also driven by the education of both sides. That result suggests that violence studies from one-couple data which mostly includes only women side suffer

from response-bias. Hence one should be careful analyzing the effects of education on sensitive behaviors which are prone to be manipulated during survey interviews. Thus couple data is a better tool comparing to one-partner data for sensitive behavior studies.



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APPENDIX



Table 9: Summary Statistics for 23-37 Year Old Women by Sample

VARIABLES	Sample		Difference (1)-(2)
	Restricted	Unrestricted	
	(1) Mean (SD) Obs	(2) Mean (SD) Obs	
Schooling indexes			
Junior Highschool Completion	0.59 (0.49) 2,705	0.56 (0.50) 4,133	-0.03*** (0.01)
Highschool Completion	0.40 (0.49) 2,705	0.38 (0.49) 4,133	-0.03*** (0.00)
Primary School Completion	0.90 (0.30) 2,705	0.88 (0.32) 4,133	-0.02*** (0.00)
College Completion	0.14 (0.35) 2,705	0.13 (0.34) 4,133	-0.02*** (0.00)
Domestic Violence Index			
Physical Violence			
Women's report	0.05 (0.21) 2,705	0.05 (0.22) 3,746	0.00 (0.00)
Men's report	0.04 (0.19) 2,705	0.04 (0.19) 3,096	0.00 (0.00)
Psychological Violence			
Women's report	0.74 (0.44) 2,705	0.73 (0.44) 3,746	0.00 (0.00)
Men's report	0.81 (0.39) 2,705	0.81 (0.39) 3,096	0.00 (0.00)
Financial Violence			
Women's report	0.07 (0.26) 2,705	0.07 (0.26) 3,746	0.00 (0.00)
Men's report	0.07 (0.25) 2,705	0.07 (0.26) 3,096	0.00 (0.00)

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Table 9 - Continued from previous page

Proportions of agreement on reporting			
Agreement on reporting physical violence	0.93 (0.25) 2,705	0.94 (0.25) 2,761	0.00 (0.00)
Agreement on reporting psychological violence	0.76 (0.43) 2,705	0.76 (0.43) 2,761	0.00 (0.00)
Agreement on reporting financial control behavior	0.90 (0.30) 2,705	0.90 (0.30) 2,761	0.00 (0.00)
Partner and Relationship Characteristics			
Marriage Age	21.35 (3.87) 2,705	21.21 (3.85) 4,081	-0.20*** (0.04)
Husband's junior high school completion	0.68 (0.47) 2,705	0.67 (0.47) 4,133	-0.02*** (0.00)
Husband's high school completion	0.52 (0.50) 2,705	0.50 (0.50) 4,133	-0.04*** (0.00)
Husband's college completion	0.19 (0.39) 2,705	0.18 (0.38) 4,133	-0.02*** (0.00)
Homogamy	-0.12 (0.79) 2,705	-0.13 (0.79) 4,133	-0.01* (0.01)
Husband's age	35.48 (5.41) 2,705	35.49 (5.51) 4,133	-0.01 (0.05)

Data are from 2016 Turkey's Family Structure Survey. Column (1) lists the means, standard deviations and observations of variables drawn from the restricted sample. Column (2) lists the same drawn from the unrestricted sample. Column (3) presents the difference between the two samples. Bandwidth is 7.

Table 10: Treatment Effects on Schooling for Bandwidth 4

	(1)		(2)	(3)	(4)
Outcome	All Sample w_after1986	m_after1986	Sample: M0 w_after1986	Sample: W1 m_after1986	Bandwidth
Panel A: All Sample					
Women’s Junior High School Completion	0.201*** (0.030)	-	-	-	4
Men’s Junior High School Completion	-	0.109*** (0.015)	-	-	4
Observations	2,900	2,208	-	-	
Panel B: All Married Couples					
Women’s Junior High School Completion	0.167*** (0.013)	0.108*** (0.030)	0.158*** (0.030)	0.098* (0.039)	4
Men’s Junior High School Completion	-0.005 (0.028)	0.136*** (0.050)	-0.002 (0.029)	0.097 (0.067)	4
Observations	1,624		1,415	646	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

Bandwidth is half of the optimal one selected according to IK and CCT

Standard errors are clustered by decentralized age

Table 11: Effects of Reform on Domestic Violence Reporting and Reporting Behavior by Gender

	(1)		(2)	(3)	(4)
Outcome	All Sample w_after1986	m_after1986	Sample: M0 w_after1986	Sample: W1 m_after1986	Bandwidth
Panel A: Women Reporting					
Physical Violence	-0.034 (0.028)	-0.013 (0.023)	-0.029 (0.032)	-0.006 (0.033)	4
Psychological Violence	-0.003 (0.050)	-0.071 (0.056)	-0.041 (0.058)	-0.083 (0.069)	4
Financial Control Behavior	-0.026 (0.030)	-0.001 (0.030)	0.010 (0.036)	-0.005 (0.040)	4
Observations	1,624		1,415	646	
Panel B: Men Reporting					
Physical Violence	0.005 (0.019)	-0.041** (0.019)	-0.013 (0.022)	-0.069** (0.030)	4
Psychological Violence	-0.025 (0.043)	0.024 (0.053)	-0.009 (0.045)	-0.006 (0.067)	4
Financial Control Behavior	0.034 (0.031)	-0.010 (0.033)	0.034 (0.034)	-0.016 (0.051)	4
Observations	1,624		1,415	646	
Panel C: Women Under- Over-Reporting					
Underreporting Physical Violence	0.012 (0.014)	-0.038** (0.015)	0.000 (0.016)	-0.062** (0.028)	4
Overreporting Physical Violence	-0.027 (0.026)	-0.010 (0.021)	-0.016 (0.029)	0.001 (0.033)	4
Underreporting Psychological Violence	0.033 (0.044)	0.086* (0.045)	0.069 (0.049)	0.145*** (0.053)	4
Overreporting Psychological Violence	0.055 (0.037)	-0.009 (0.040)	0.037 (0.037)	0.068 (0.055)	4
Underreporting Financial Control Behavior	0.049** (0.021)	-0.013 (0.025)	0.039* (0.023)	-0.019 (0.039)	4
Overreporting Financial Control Behavior	-0.010 (0.028)	-0.005 (0.027)	0.016 (0.032)	-0.008 (0.033)	4
Observations	1,624		1,415	646	

Bandwidth is half of the optimal one selected according to IK and CCT

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

Standard errors are clustered by decentralized age

Column (1) lists results for all sample while column (2) and column (3) are for subsamples

Table 12: Multinomial Logit Results

		(1)		(2)	(3)	(4)
Outcome		All Sample w_after1986	m_after1986	Sample: M0 w_after1986	Sample W1 m_after1986	Bandwidth
Violence Type	Report Group					
Physical Violence	1	-1.683 (2.025)	-1.473 (2.731)	-2.773 (2.908)	-0.711 (0.000)	4
	2	-0.657 (0.842)	-0.216 (0.675)	-0.445 (0.916)	-0.659 (0.000)	
	3	0.492 (0.611)	-1.844*** (0.610)	0.258 (0.680)	-4.719 (0.000)	
Psychological Violence	1	0.148 (0.350)	0.044 (0.421)	0.076 (0.411)	0.138 (0.558)	4
	2	0.928 (0.628)	0.212 (0.708)	0.708 (0.644)	0.955 (0.830)	
	3	0.548 (0.470)	0.666 (0.497)	0.716 (0.517)	1.448** (0.642)	
Financial Control Behavior	1	-0.669 (1.054)	0.327 (1.034)	-0.227 (1.356)	-0.719 (2.438)	4
	2	-0.169 (0.595)	-0.125 (0.623)	0.447 (0.652)	-0.347 (0.691)	
	3	1.142** (0.478)	-0.539 (0.521)	1.127** (0.524)	-1.552** (0.631)	
Observations		1,624		1,415	646	

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

Bandwidth is half of the optimal one selected according to IK and CCT

Log-odds of being in group 1, 2 and 3 are compared against log-odds of being in group 4

Standard errors are clustered by decentralized age

Table 13: Effects of Reform on Domestic Violence Reporting and Reporting Behavior by Gender

	(1)		(2)	(3)	(4)
Outcome	All Sample w_after1986	m_after1986	Sample: M0 w_after1986	Sample: W1 m_after1986	Bandwidth
Panel A: Women Reporting					
Physical Violence	-0.002 (0.018)	0.023 (0.020)	0.007 (0.020)	0.007 (0.026)	7
Psychological Violence	-0.077** (0.031)	-0.039 (0.041)	-0.057* (0.033)	-0.077 (0.064)	7
Financial Control Behavior	-0.030 (0.026)	-0.018 (0.030)	-0.016 (0.028)	-0.008 (0.040)	7
Observations	2,705		2,313	940	
Panel B: Men Reporting					
Physical Violence	-0.002 (0.015)	-0.028* (0.015)	-0.008 (0.019)	-0.025 (0.029)	7
Psychological Violence	-0.017 (0.041)	0.070 (0.043)	-0.030 (0.044)	0.069 (0.043)	7
Financial Control Behavior	0.005 (0.031)	-0.026 (0.030)	-0.002 (0.034)	-0.023 (0.033)	7
Observations	2,705		2,313	940	
Panel C: Women Under- Over-Reporting					
Underreporting Physical Violence	0.003 (0.013)	-0.032** (0.012)	-0.002 (0.017)	-0.034* (0.020)	7
Overreporting Physical Violence	0.003 (0.017)	0.019 (0.015)	0.012 (0.018)	-0.002 (0.018)	7
Underreporting Psychological Violence	0.074*** (0.024)	0.078* (0.042)	0.063** (0.030)	0.131** (0.054)	7
Overreporting Psychological Violence	0.015 (0.029)	-0.031 (0.026)	0.036 (0.033)	-0.014 (0.037)	7
Underreporting Financial Control Behavior	0.017 (0.023)	-0.016 (0.021)	0.006 (0.027)	-0.032 (0.029)	7
Overreporting Financial Control Behavior	-0.018 (0.022)	-0.008 (0.023)	-0.007 (0.025)	-0.018 (0.035)	7
Observations	2,705		2,313	940	

Standard errors are clustered by 26 childhood region of Turkey

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

Column (1) lists results for all sample while column (2) and column (3) are for abovementioned subsamples

Table 14: Effects of Reform on Domestic Violence Reporting

Outcome	All Sample		Sample: M0	Sample: W1	Bandwidth
	w_after1986	m_after1986	w_after1986	m_after1986	
Panel A: Women Reporting					
Physical Violence	-0.160 (0.131)	-0.064 (0.108)	-0.138 (0.153)	-0.030 (0.157)	4
Psychological Violence	-0.006 (0.110)	-0.158 (0.124)	-0.092 (0.128)	-0.184 (0.153)	4
Financial Control Behavior	-0.111 (0.129)	-0.003 (0.129)	0.044 (0.153)	-0.023 (0.169)	4
Observations	1,624		1,415	646	
Physical Violence	-0.009 (0.086)	0.109 (0.091)	0.031 (0.102)	0.035 (0.120)	7
Psychological Violence	-0.170* (0.087)	-0.086 (0.097)	-0.127 (0.102)	-0.170 (0.123)	7
Financial Control Behavior	-0.127 (0.087)	-0.077 (0.112)	-0.067 (0.101)	-0.036 (-0.147)	7
Observations	2,705		2,313	940	
Panel B: Men Reporting					
Physical Violence	0.026 (0.103)	-0.224** (0.103)	-0.070 (0.118)	-0.379** (0.163)	4
Psychological Violence	-0.060 (0.105)	0.057 (0.129)	-0.022 (0.109)	-0.014 (0.163)	4
Financial Control Behavior	0.147 (0.133)	-0.042 (0.144)	0.146 (0.147)	-0.072 (0.224)	4
Observations	1,624		1,415	646	
Physical Violence	-0.041 (0.076)	-0.153 (0.110)	-0.042 (0.095)	-0.136 (0.146)	7
Psychological Violence	-0.009 (0.081)	0.170* (0.100)	-0.073 (0.086)	0.166 (0.129)	7
Financial Control Behavior	0.024 (0.105)	-0.114 (0.134)	-0.010 (0.129)	-0.100 (0.188)	7
Observations	2,705		2,313	940	

Outcome variables are z-scores of dummies

Standard errors are clustered by decentralized age

M0 constitutes for the sample in which none of husbands were affected by the reform

W1 constitutes for the sample in which all of wives were affected by the reform

Results are for both optimal bandwidth 8 and 4