ECONOMICS

& Sociology

Hüseyin Kaya,
İstanbul Medeniyet University,
Istanbul, Turkey,
E-mail:
huseyin.kaya@medeniyet.edu.tr

Çağlar Yurtseven,
Bahçeşehir University,
Istanbul, Turkey,
E-mail: cayurtseven@yahoo.com

CAN MARRIAGE BE BAD FOR HEALTH? EVIDENCE FROM TURKEY

ABSTRACT. Literature on marital status and health generally finds that being married has a positive effect on health, however, this conclusion comes mostly from the studies of Western societies. In order to investigate whether this belief is generalizable to the entire world, we use the data on Turkey where family relations are mainly dominated by Oriental values and population is predominantly Muslim. We use the cross-sectional data from the 2010 Turkish Health Survey, which was carried out in 7,886 households (20,200 individuals)to employ an ordered probit model using self-rated health as a measure for health status. The results suggest that, contrary to the conclusions drawn from the previous studies, marriage has a negative effect on health status. We also show that this relationship is even stronger when we consider only women.

Introduction

Literature on marital status and health usually has a common conclusion. It claims that married men are healthier than single men and married women are at least as healthy as single women (Kiecolt-Glaser, and Newton, 2010; Wanic, and Kulik, 2011). However, this conclusions is based mostly on Western data (Europe and America) and thus there is a problem with generalizability of these previous findings. Marriage and man-woman relations are not easily generalizable to the entire world.

In this study, we aim to understand if the general belief in the positive effect of marriage on health status is applicable to Eastern countries as well. To the best of our knowledge, this is the first study to investigate marriage and health status relationship in Turkey which is mainly dominated by Oriental values and its population is predominantly Muslim (Kandiyoti, 2003). The findings of the study would provide guidance to various institutions from governments to health insurance companies especially in the Western world for designing their policies in a more effective way. For example, governments throughout the world give incentives for marriage. This is partly due to the assumption that marriage helps economies due to its positive effect on productivity through better health. We investigate whether similar assumptions can be made by the governments of Eastern countries as well. This study will help policy makers have better management of their resources.

The meta-analysis of 126 papers by Robles, Slatcher, Trombello, and McGinn (2014) covers most of the literature on this topic and the papers in the analysis use data on Western countries[1]. These studies tend to emphasize on loneliness and lack of social control in developed countries in their explanation of positive relationship between health and marriage (See the Literature Review part).

Turkey is still a developing country with stronger family and relative ties and also relatively early first marriage age (23,6 for women and 26,8 for men, TURKSTAT, 2014). *Considering this we hypothesize that Turkey is immune to negative effects from being single on health, i.e. from loneliness and lack of social control. Hence, there is no significant reason in Turkey for married people to be healthier than single people. In addition, difficulties in relationship may even affect health of married people, in a negative way.*

To test this, we use the data from the 2010 Turkish Health Survey, carried out in 7,886 households (20,200 individuals). The data are obtained from Turkish Statistical Institute. Following the literature, we estimated an ordered probit model. We concluded that marriage does not positively affect the health status of Turkish people, measured by self-rated health, as implied by the literature. In Turkey, single men are at least as healthy as married men. Moreover, married women actually have worse health statuses than single women. The paper is structured as follows. First, we provide a thorough review of literature. After giving information about our data and method, we present the estimation results. We discuss possible reasons for the results obtained, which are not in line with the most of the literature on the subject matter. Finally, we briefly conclude and provide potential directions for further research.

1. Literature Review

Most of the explanations in the literature are designed to justify why marriage helps people to have better health statuses. To have full insight on the topic we try to cover all the explanations that relate marriage and health including the positive ones as well.

The first group of studies that link better health and marriage use ***economic reasons*** to explain this relation. Rohrer *et al.* (2008) find in their clinical work on women that being single, aged over 65, having more physical symptoms than most patients, and feeling depressed are each independently related to lower self-rated health status.

In his influential work, Becker (1981) explains that, through the means of specialization and economies of scale, marriage leads to an increase in the resources of married couples thereby increasing their economic wealth.

From the work of Fritzell and Burstrom (2006), we understand that, being a single woman increases the risk for poor self-rated health because of 'economic strain'. They define economic strain as having had difficulties making ends meet in the last year.

In addition, Sayers *et al.* (2006) showed that being single may be associated with a greater degree of separation from usual health care when taking into consideration insurance women may receive through a current or former spouse.

An econometrics based explanation why married people are healthier than non-married people is related to ***'selection bias'.*** This involves the claim that people who are unhealthy or more likely to be unhealthy in the close future are less likely to marry, but the evidence cited is equivocal. Brown and Giesy (1986) find that people with spinal cord injuries are less likely to be married. However, this relationship may work the other way around as well. Married people are generally more risk averse and engage less in risky activities.

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[1] There is a few papers on this subject which uses data from Asian countries such as Japan and Tayland (Hu & Goldman, 1990).

Another explanation used by Duncan *et al.* (2006) and Bachman *et al.* (2013) is that, for both men and women, the frequency of binge drinking declines substantially with marriage. Bachman and his colleagues also find substantial declines in marijuana use and smoking around the time of first marriage for both men and women.

The researchers who find a positive relationship between health and marriage use social reasoning to justify their empirical works as well. Marriage is supposed to bring a *social control* mechanism to one's life which is defined as the "commitment, caring, advice and aid provided in personal relationships" (Ross *et al.*, 1990, p. 1062). Since Bloom (1990) showed a positive correlation between mental health and physical health, researchers say the social support mechanism affects the mental health of people, which in turn affects the physical health of people in a positive way. Marriage is associated with higher levels of social support, social control, and personal control, and all of these resources are positively associated with health (Umberson, 1987).

We have some general evidence from the literature that can be used to support better health status of single people and/or can be used to explain the decreasing positive effect of marriage on health.

The first one of these is the physical activity and marriage relation. According to Nomaguchi and Bianchi (2004), Eng *et al.* (2005), Lee *et al.* (2005) married men spend substantially less time exercising than their unmarried counterparts. This may affect the health of single men positively.

The second evidence is by Musick and Bumpass (2006) which posits that a larger population of unmarried persons, providing a larger pool of potential friends, may contribute to greater access to social resources for the unmarried and increase the probability of better health for single people all around the world, including Turkey.

The final evidence is the "crisis" model. The never married are relatively immune to any apparent disadvantage associated with the stress of marital dissolution. The stress that married people experience during the dissolution process deteriorates their health even if they decide not to divorce (Umberson, 1987).

2. Data and Method

This study uses the 2010 Turkish Health Survey data obtained from Turkish Statistical Institute (TURKSTAT)[2]. The 2010 Turkish Health Survey was conducted from May to June 2010 in 7,886 households (20,200 individuals) which were selected in order to produce estimations for Turkey at the national, urban and rural levels. The survey was carried out using face-to-face interviews with 20,200 individuals. The survey includes four different questionnaires: i- basic characteristics of individuals, ii- 0-6 age group, iii- 7-14 age group and iv- 15+ age group.

As in Zheng and Thomas (2013) we limit our analysis to people over the age of 24. In the final sample we have 11,780 respondents.

2.1. Dependent variable

As a dependent variable, we use self-rated health (SRH). SRH was assessed with the question "How is your health in general?" This question has five response categories: "1=Very good", "2=Good", "3=Fair", "4=Poor" and "5=Very poor".

In the literature SRH is a widely used measure of health and regarded as a good predictor of objective health measures (Zheng & Thomas, 2013). Using our data we

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[2] http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=8620

determined if self-rated health is a good indicator for health status in Turkey. We calculated the average number of visits for outpatient services and the average number of days spent for inpatient services in a year. As seen in *Figure 1*, the average number of visits for outpatient services and the number of days spent for inpatient services in a hospital increases as health status gets worse. These statistics suggest that the answers to the health status related questions are consistent.
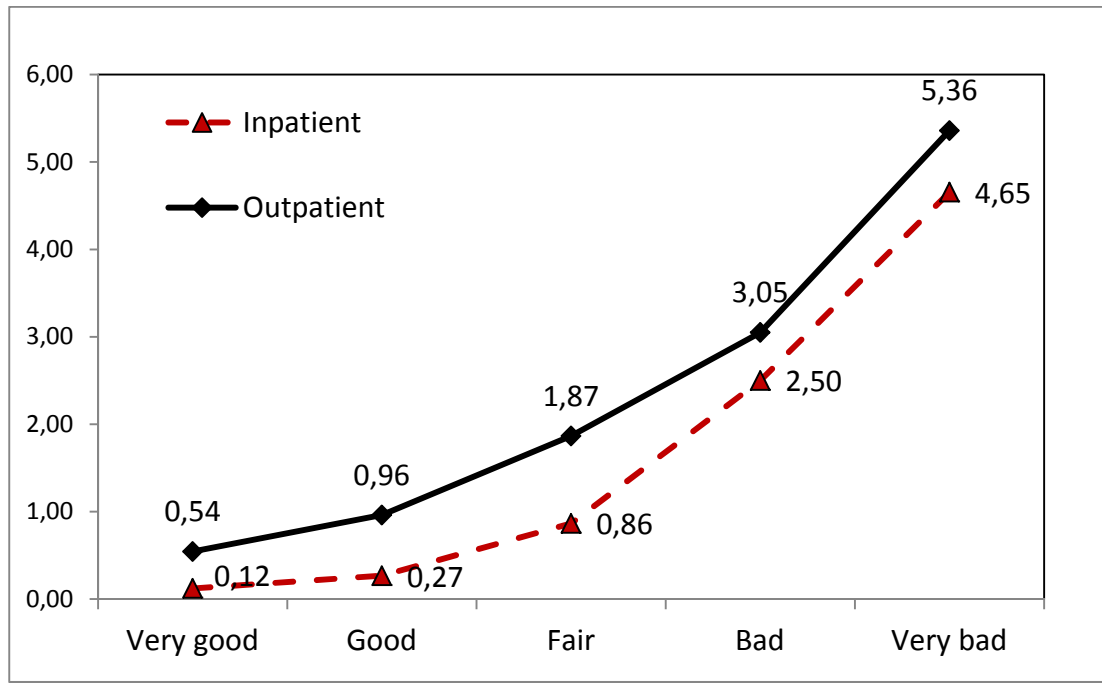

Figure 1. Average number of visits (outpatient) and days spent (inpatient) for treatment services

2.2. Independent variables

Marital status: Marital status is self reported with four alternatives: *never married, married, widowed and divorced.*

Age: From the data we consider the following 6 age groups: *25-34, 35-44, 45-54, 55-64, 65-74* and *75+* years.

Income: The data provides 10 groups for monthly income: *<350, 351-500,501-620,621-750,751-900,901-1100,1101-1300,1301-1700,1701-2300* and *> 2300* Turkish Lira. However, we collapse the 10 income groups into 6 groups as: >500, 501-900, 901-1300, 1301-1700, 1701-2300 and >2300 TL.

Education: The education level is self-reported with 8 alternatives: *illiterate, literate but did not go to school, primary school, middle school, high school, university or college, master or Phd.*

We also control for work status (*full time/part time job, not employed*) sex (*male, female*) and location (*urban, rural*).

2.3. Analysis of data

We use an ordered probit model to estimate the effect of marital status on SRH after controlling for individual covariates (age, income, education etc). Moreover, we stratified the

sample by gender (male, female) to determine whether the relation between health status and marital status differed by gender.

3. Results

Table 1 shows the prevalence (%) of SRH and individual covariates. The prevalence of good and very good health is 67% among men and 48% among women. In total, the prevalence of good and very good health is 56.3% among all respondents. The prevalence of poor and very poor heath is 8.9% among men and 16.7% among women. These statistics clearly indicate that men in Turkey report better health status than women. The majority of the respondents are married. The prevalence of married is 86.4% among men and 78% among women. While the prevalence of never married among men is higher than women, the prevalence of widowed among women is much higher. The age distribution is similar for men and women and almost 70% of men and women are less than 55 years old. The prevalence for education indicates that, on average, the education level of men is higher than the education level of women. While 21% of women are illiterate, this is true for only 4% of men. The prevalence of higher education (university or more) is 8.5% among women and 15.5% among men. Since the income data is the household income, the income distribution is similar for men and women. Almost half of the sample has a monthly income of less than 1300 TL (in 2010 1TL was 0.66$ on average). The prevalence of work status shows that 80% of women are unemployed. This rate is not a surprise because employment statistics in Turkey show that the labor force participation rate and unemployment rate of women in 2010 are 29.6% and 11.3% respectively. On the other hand, these statistics are 74.5% and 10.4% for men. Finally, one of every three respondents is living in a rural area.

Table 1. Prevalence (%) of variables

	Full sample	Male	Female
1	2	3	4
Self-rated health	n=11768	n=5150	n=6618
Very good	6.85	9.67	4.65
Good	49.43	57.24	43.35
Fair	30.43	24.17	35.3
Poor	11.36	7.65	14.25
Very poor	1.93	1.26	2.45
Marital Status	n=11780	n=5155	n=6625
Never Married	7.72	9.7	6.17
Married	81.74	86.42	78.1
Widowed	8.34	2.54	12.85
Separated	2.21	1.34	2.88
Age	n=11780	n=5155	n=6625
25-34	24.63	22.91	25.98
35-44	23.93	23.57	24.21
45-54	21.26	22.91	19.98
55-64	14.91	15.19	14.69
65-74	9.47	9.47	9.46
75+	5.8	5.96	5.68
Education	n=11780	n=5155	n=6625
Illiterate	13.46	4.13	20.72
Literate but did not go to	7.11	5.82	8.12

1	2	3	4
Primary school	45.14	45.82	44.62
Middle school	8.34	10.96	6.29
High school	14.33	17.69	11.71
University or college	10.79	14.43	7.95
Master or Phd.	0.82	1.14	0.57
Income (TL)	N=11677	N=5115	N=6562
<500	17.97	16.21	19.34
500-900	31.68	31.13	32.1
901-1300	16.75	17.29	16.33
1301-1700	13.68	14.17	13.29
1701-2300	8.47	9.03	8.03
>2300	11.47	12.18	10.91
Work status	n=11780	n=5155	n=6625
Not employed	60.53	35.38	80.09
Full time/part time job	39.47	64.62	19.91
Location	n=11780	n=5155	n=6625
Rural	29.69	30.03	29.43
Urban	70.31	69.97	70.57

Table 2 reports the estimation results of the ordered probit regression. The first column shows the results for the total sample, the second column shows the results for men and the third column reports the results for women. Since 1 denotes very good health status and 5 denotes very bad health status in the coding of SRH, the negative sign of a coefficient indicates the likelihood of having better health status relative to the reference group and positive sign of a coefficient indicates the likelihood of having worse health status relative to the reference group.

The first set of estimates belongs to marital status. When married persons are considered as a reference group, the results for the total sample indicate that never married persons report better health than married ones. This relationship is even stronger when we consider only women. However, when we consider men the results show that the sign of the never married group is still negative but not significant anymore. These results suggest that getting married deteriorates health, particularly women's health[3].

The effects of age, income and education on health status are in line with the findings in the literature. As people get older they tend to report poor health. The magnitudes of the coefficient of age dummies for women are higher than those for men. This finding indicates that the negative effect of higher ages on women's health is greater than on men's health. Higher levels of income and education significantly increase the likelihood of having good health. A comparison of the coefficients of education and income dummies suggests that the magnitude of the coefficients for men is usually higher than for women. There is only one exception for women and it involves those who have a master or Phd degree[4]. On the other hand, being employed has a positive effect on health status; however, this relationship is not significant for women. Lastly, living in a rural or urban area has no significant effect on health status.

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[3] We also create a new self-reported health variable (SRH2) by collapsing the first two categories into Good and the last two categories into Bad. We reestimate the model using SRH2 and find very similar results.
[4] Allison (1999) notes that comparisons of probit or logit coefficients across groups can give misleading results. Williams (2009) argues that heterogeneous choice models provide a solution for this problem. When we estimate the model using the model suggested by Williams (2009) we reached very similar results for coefficient comparisons.

Table 2. Results of ordered probit regression

	Full sample	Male	Female
Marital Status			
Married	Reference	Reference	Reference
Never Married	-0.143***	-0.062	-0.324***
Widowed	0.046	-0.097	0.062
Separated	-0.015	-0.181	0.014
Age			
25-34	Reference	Reference	Reference
35-44	0.316***	0.246***	0.360***
45-54	0.529***	0.351***	0.658***
55-64	0.799***	0.632***	0.900***
65-74	1.001***	0.787***	1.141***
75+	1.238***	1.101***	1.312***
Education			
Illiterate	Reference	Reference	Reference
Literate but did not go to	-0.185***	-0.288**	-0.167**
Primary school	-0.353***	-0.431***	-0.326***
Middle school	-0.377***	-0.463***	-0.345***
High school,	-0.597***	-0.705***	-0.547***
University or collage	-0.649***	-0.722***	-0.637***
Master or Phd.	-0.878***	-0.720***	-1.237***
Income (TL)			
<500	Reference	Reference	Reference
500-900	-0.184***	-0.247***	-0.134***
901-1300	-0.198***	-0.271***	-0.144**
1301-1700	-0.249***	-0.251***	-0.246***
1701-2300	-0.376***	-0.414***	-0.353***
>2300	-0.436***	-0.492***	-0.410***
Work status			
Not employed	Reference	Reference	Reference
Full time/part time job	-0.157***	-0.247***	-0.073
Gender			
Female	Reference		
Male	-0.325***		
Location			
Rural	Reference	Reference	Reference
Urban	-0.025	-0.006	-0.040
N	11768	5150	6618

* p < 0.05, ** p < 0.01, *** p < 0.001

4. Discussion

In the literature review part, we cover some general evidence that can be used to explain negative effect of marriage on health. However we believe that, these are not enough to explain the situation in Turkey. Hence, to understand the mechanisms that might be peculiar to Turkey, we need to have a look at some facts related to marriages and family structure in Turkey.

Until the establishment of the modern republic of Turkey in 1923, Islamic family law and religious jurisdiction was applied in Turkey. During the Ottoman Empire time, the husband was allowed to marry up to 4 women. He was able to purchase as many female slaves as he wanted.

In 1926, the Swiss legal system was adopted to regulate family and marital issues. The legal minimum age was increased to 18 and the consent of the marriage partners was made a legal requirement for the start of a marriage. This started a change in the traditional way of marriage. For example, during the Ottoman period almost all marriages were arranged and the consanguinity rate was more than 50%.

Marriages were regulating the allocation of female labor in the communities so it was a marriage market in the literal sense. Two institutional regulations were governing the market; payment of bride wealth and marriages within one community of descent (Lévi-Strauss, 1981).

There have been big improvements according to the Family Structure Research of the Turkish Statistical Institution (TurkStat, 2006); in Turkey 50% of the marriages are arranged. [5]According to a family structure research for State Planning Organization by Atalay, Kontaş, Beyazıt and Madenoğlu (1992) arranged marriages are especially common in the East, Middle, South and North parts of Turkey. It is also common within uneducated groups that are living in metropolitan areas. Arranged marriages are not popular in the younger and better-educated parts of the urban population. For these people, marriage of consent is a way to prove romantic-love. There is an improvement also in the consanguinity rate. It is now around 20% and it has a declining trend (Erci & Ergin, 2005).

Even though there is clear evidence that Turkey is approaching the western type of civil life and marriage, still the quality and efficiency of marriages in Turkey are different from the marriages in the West.

We believe that the main reason for the unexpected results of this study is the fact that single people do not suffer problems associated with loneliness even if they are single. According to our data, Turkish Health Survey, only around 10% of single people live on their own. Close to 90% of singles live with their families. Culturally, singles who live on their own stay connected with their families in Turkey. It is common for these singles to visit their parents every weekend or month, stay with them, or talk to them on the phone every day.

Due to this difference, the ***economic reasoning*** argument is not valid for Turkey. Since singles in Turkey live with their relatives i.e. with their father, mother, brother, sister economic strain rooted from being unmarried is not a problem in Turkey as much as it is in the developed-western world. In contradiction, according to our data, if women are single, they are more likely to work when compared to married women[6]. That is women who are single, make their own money in general, and do not have worse economic conditions just because of being single. Hence, in Turkey single people do not face the problem of economic strain more than the married people do.

Living with family is common for single people in Turkey (According to our data, only around 10% of single people live on their own). As a result single people are under the strict control of their families. Hence, the provision of **social control** maybe higher for single people rather than the married people.[7] This explains why the social control theory cannot be used to explain a positive relationship between health and marriage in Turkey.

In addition to these, to understand the situation in Turkey better, we should also consider the quality of marriage as a possible determinant of health status of married people.

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[5] This data do not provide detailed information based on aged groups.

[6] There is no significant difference for single men and married men.

[7] For the singles who live on their own, we should remember that, they stay connected to their families by the help of frequent visits and phone calls. That provides a social control as well.

Miller, Hollist, Olsen, and Law (2013) show that the self-rated health of married people is negatively related the quality of the marriage that couples have. Research conducted by Glenn and Weaver (1981) and Fincham and Beach (1999) show that unmarried people are on average happier and have lower depression rates then unhappily married people. All these arguments and the result of this study for Turkey that unmarried people are at least as healthy as married people, makes us to think that if the satisfaction from marriages is low in Turkey.

The Life Satisfaction Survey which is conducted by (TurkStat, 2012) provides some insight into the quality of marriages in Turkey. For example, when the source of happiness is asked, only 7% of happy people say that they are happy due to reasons related to their spouse. Wanic and Kulik (2011) posit that women have stronger negative reactions to the marital conflict and satisfaction and unhappily married women do not enjoy better health in comparison to single women. The lower health quality of married women then married man relative to their single counterparts can be interpreted as another indicator of low marriage quality in Turkey. Additionally, according to The World Factbook[8] in Europe, a couple has 1.4 children on average. However, in Turkey a couple has 2.1 children on average. With limited income and limited living space, this child effect may decrease the quality of marriages in addition to its effect on the economic strain problem.

Marriages in Turkey might be placing too many responsibilities on couples when compared to marriages in the western world. This is another major explanation that could be used to understand the negative relationship between health status and marriages in Turkey. Culturally, both the bride and groom are expected to satisfy their own family and spouse's family during the marriage. There is regular tension between these families regarding many relatively unimportant topics and this may increase the stress level of both man and woman in the marriage. Unsurprisingly, married couples feel more exhausted than single men and women according to data provided by the Turkish Health Survey. In 2010 Turkish Health Survey asked "How often did you feel worn out in last four weeks?". This question has five response categories: "1=Every time" "2=Most of the time" "3=Some time" "4=Very rare" and "5=Never". When we estimate an ordered probit model using "feeling worn out" as a dependent variable and aforementioned independent variables we find that single persons feel worn out less often than married persons. We also find that this relationship is not different for men and women. However all of these are observations from raw data and theory. Further research is needed to quantify the quality of marriages in Turkey.

Conclusion

This study investigates the relationship between health status and marriage in Turkey, by applying an ordered probit model to data based on the 2010 Turkish Health Survey. We find that, never married persons report better health than married ones. This relationship is even stronger when only women are considered. However, when we consider men, the results show that the sign of the never married group is still negative but not significant anymore. This finding is important in the sense that, in the literature, there is no work; that shows a negative relationship between health and marriage. However, we also should note that, most studies reporting results from North America and Europe neglect developing countries and which may have different cultures about marriage. The majority of Turkey's population is Muslim and eastern values dominate civic life in the country. Therefore, to understand difference in findings, we focus on the family and man-woman relations in Turkey, which are not very similar to western countries.

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[8] https://www.cia.gov/library/publications/the-world-factbook/

As a possible explanation for the negative relationship between marriage and health in Turkey, it should be noted that many "single" people in Turkey are not actually single. That is, they have very strong ties with their families and relatives. Therefore, they do not suffer from the loneliness, lack of social control, or lack of an insurance mechanism as singles do in the western world. Therefore, singles in Turkey do not have a life that is very similar to lives of singles in many other western countries.

To address the negative health effect of marriages especially on women, we also consider the structure and the quality of marriages in Turkey. Raw data and theory implications makes us to think that quality of marriages in Turkey may not be very high. Additionally, we offer some examples that may indicate that the quality of marriages in Turkey is not very good. However, due to limited data on marriage, future research should be conducted to investigate the reasons behind the negative effects of marriage on health.

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