

NILAY PEKEL ULUDAĞLI\* & ŞEYDA PEKÇETİN

## PERCEIVED PHYSICAL AND PSYCHOLOGICAL HEALTH IN MIDDLE ADULTHOOD

### Links to Marital Satisfaction, Age of Marriage, and SES

(Received: 2 September 2020; accepted: 31 July 2021)

**Background:** The life course health development approach, as a new theoretical model relating to health, dwells on psychosocial factors as well as biological factors, and it proposes that the effects of developmental timing unfolding over one's lifespan should be considered. Based on this theoretical model, as well as empirical studies relating to marriage and health, one of the psychosocial factors that may contribute to the health of middle-aged individuals is the marital relationship.

**Aims:** The aim of this study – conducted with individuals in middle adulthood – is to investigate the relationships between marital satisfaction, age at the time of marriage, SES (socioeconomic status) and psychological and physical health.

**Method:** Data was collected from middle-aged individuals between 40–69 years in Turkey (160 women and 142 men). The World Health Organization Quality of Life Measurement Tool, Brief Symptom Inventory, Marriage Life Scale, and a Demographic Information Form were used to assess the participants' perceived physical and psychological health, their marital satisfaction, their age of marriage, and SES.

**Results:** A path analysis indicated that the age of marriage was positively related, and perceived psychological health problems were negatively related to perceived physical health. Both marital satisfaction and SES were negatively related to perceived psychological health problems. Upon examination of the mediator role of psychological health problems and SES, it was observed that both marital satisfaction and SES were related to perceived physical health through perceived psychological health problems. Also, the age of marriage was related to perceived psychological health problems via SES.

**Conclusion:** The findings showed that marriage is an important component in the evaluation of perceived health in middle age; individuals are healthier when they get married at a more mature age and have a positive marital relationship.

\* Corresponding author: Nilay Pekel-Uludağlı, Acıbadem University, Faculty of Science and Literature, Department of Psychology Acıbadem Üniversitesi Kayışdağı Cad. No: 32, 34752, Ataşehir-İstanbul, Turkey; nilay.pekel@acibadem.edu.tr.

**Keywords:** perceived physical health; perceived psychological health; marital satisfaction; age of marriage; middle adulthood

## 1. Introduction

Numerous studies from many disciplines are published every year in order to understand and improve human health (HALFON et al. 2018). Nowadays, the ‘life course health development approach’, which focuses on the dynamic interactions of the individual with the environment over time, has moved to the forefront when evaluating health. The life course health development approach examines health with a procedure that evaluates psychological and social processes rather than reflecting only on the basis of biological processes (BORRELL-CARRIÓ et al. 2004; HALFON & FORREST 2018). In line with these theoretical models, current studies show that health is closely related to many social and psychological factors, such as interpersonal relations (AHNQUIST et al. 2012), and social support (UCHINO 2006), and stress (SCHNEIDERMAN et al. 2005).

Within the scope of these psychological and social processes, one of the factors that may play a role in the health of middle-aged and old-aged individuals is the marital relationship (CHOI et al. 2016; SLATCHER & SELÇUK 2017). In this study, the authors plan to investigate the relationships between physical and psychological health, marital satisfaction, and age of marriage in middle adulthood. The life course health development approach and some scientific models provide a theoretical base for our research model. The life course health development method addresses how health changes over time. According to this scheme, developmental timing is important and the effect of the timing of exposures unfolds over a lifespan (HALFON & FORREST 2018). In accordance with this theoretical framework, we assumed that individuals will be exposed to different effects over time, depending on their age at marriage. Individuals who get married at an early age are in a more disadvantageous position than those who get married later in life. People who marry at an early age are more likely to struggle with several economic problems and stress in later years because they have fulfilled adult roles before they sufficiently achieved their identities and careers (BELL & LEE 2006; FALCI et al. 2010). Also, psychological immaturity poses a risk to their marital relationships. These factors may negatively affect their marriages (LEHRER 2008). Also, some researchers proposed a variety of theoretical models that psychological processes may mediate the relationship between marital quality and physical health. Marital relationships support or deteriorate psychological health, which in turn affects physical health. Positive marital characteristics including social support, intimacy, and negative marital characteristics such as dissatisfaction and conflict, affect the psychological processes, which in turn influence biological mechanisms such as blood pressure and the immune system, and then various

health outcomes emerge depending on these effects (ROBLES 2014; ROBLES et al. 2014; SLATCHER 2010).

Based on this theoretical model and empirical studies relating to marriage and health, our aim is to examine the links between age at the time of marriage, marital satisfaction, and psychological and physical health, with this cross-sectional study at a relational level. This study proposed that the age of marriage and marital satisfaction are linked to psychological health, which in turn is related to physical health. We hope that our descriptive findings may offer some perspectives for conceptual models of future longitudinal studies.

## **2. Marital satisfaction**

Marriage is seen as the most important form of relationship in life by many adults. Positive marital relationships have important effects on physical health (BOOKWALA 2015; WILSON et al. 2021) and well-being (CHOPIK 2017). Studies have shown that married individuals experience more advantages than the unmarried in terms of psychological (KENDIG et al. 2007; WAITE et al. 2009) and physical health (CHANNON et al. 2016; NIEDHAMMER et al. 2013; WILSON & OSWALD 2005). It is deemed that some factors, such as spousal support and spouses' influence on each other's health, are the determinants in proving that married individuals are healthier than unmarried individuals (HAWKINS & BOOTH 2005; WAITE & LEHRER 2003). Being married reinforces the positive mood by providing social support to an individual, and this situation supports better health behaviors, which means taking better care of oneself (SLATCHER 2010). Indeed, divorced or unmarried individuals were found to have a higher tendency in acquiring drinking and smoking habits than married people (KEENAN et al. 2017).

However, being married does not provide advantages in all circumstances, and whether a marriage has positive characteristics should also be considered. Having an unhappy marriage is more associated with poor health than having a happy marriage (LAWRENCE et al. 2019). The positive and negative aspects of marriage can affect an individual's cognitive processes (stress-related cognitive assessments and attributions to partner behaviors), mood, and health. This situation affects the endocrine, cardiovascular, and immune systems, as well as gene expression, and determines either being healthy or having a disease (SLATCHER 2010). For example, HOLT-LUNSTAD and colleagues (2008) found that people having a good marriage have better blood pressures and lower depression, and single people have better blood pressures than people having a poor marriage. Similarly, women who did not have a harmonious marriage visited the doctors more frequently due to depression and physical health problems; depression did not increase among women who had divorced their spouses with whom they had a discordant marriage, their

physical health was reported to be in good condition (PRIGERSON et al. 1999). In this context, marriage does more harm than good, especially when it has negative and conflict-ridden characteristics. Numerous studies have shown that individuals with conflicting marital relationships and low marital satisfaction possess poor physical health (BOOKWALA 2005; GALINSKY & WAITE 2014; GALLO et al. 2003; GRAMES et al. 2008; HAWKINS & BOOTH 2005; LAWRENCE et al. 2019; SOUTH & KRUEGER 2013) and they are more likely to even die early (WHISMAN et al. 2018). In a study conducted with adults that lasted for four years, it was found that an increase in marriage quality has a positive effect on physical health (CHOI et al. 2016).

Marriage quality has consequences on psychological health as well as physical health. Individuals who have a stressful marriage (SANDBERG et al. 2012), low marital satisfaction (AZIZI et al. 2019), and who often have conflicts with their spouses, have a higher tendency to suffer from depression (CHOI & MARKS 2008). In addition, other psychological disorders have been observed to be at higher rates among individuals with low marital satisfaction (ABBAS et al. 2019; ALIPOUR et al. 2019; WHISMAN & UEBELACKER 2003). Although studies have shown that a marital relationship is directly related to both physical and psychological health, it is also possible that psychological health plays a role in the association between physical health and marriage (GALINSKY & WAITE 2014; GRAMES et al. 2008). A study conducted with older adults found that depression has a mediatory role in the effect of marital quality on physical health. Accordingly, it was reported that higher marital quality is associated with better physical health in the case of lower depression; on the other hand, higher marital quality is slightly related to poor physical health in the case of higher depression (CHEN & AUSTIN 2019). Similarly, a study conducted with people with intestinal diseases found that those who had hostile interactions with their spouses had worse blood values and that having a history of mood disorder was associated with more negative blood values (KIECOLT-GLASER et al. 2018). During arguments with the spouse, many adverse health events occur, such as the acceleration of heart rate, changes in stress-related hormone levels, and irregularities in the immune system (ROBLES & KIECOLT-GLASER 2003). In fact, it was found that individuals involved in a more stressful marriage have a more weakened immune system after two years (JAREMKA et al. 2013).

In conclusion, although the marriage relationship is associated with more positive health, the quality of the marital relationship also seems important. Social factors can negatively affect health by interacting with other factors or by accumulating their effects over time (DIEZ-ROUX 2007). Since individuals spend more time in marriages during middle age than their younger counterparts (BOOKWALA 2005; KIECOLT-GLASER & NEWTON 2001) examining the characteristics of marriage in middle adulthood can reveal important findings in terms of their health.

### 3. Age of marriage

Another aspect of marital relationships that plays a role in individuals' health concerns the age they are married. Although the age of marriage in many countries has increased gradually compared to the previous years, significant variance still exists between individuals in terms of the age of their first marriage (ARNETT 2006). A variety of personal, interpersonal, and aspirational factors can determine the timing of an adulthood role (MELNIKAS & ROMERO 2019). In Turkey, the mean age of women's first marriage is 25.1, and the mean age of men's first marriage is 27.9 (TSI 2021). Individuals usually prefer to get married between the ages of 20–29 in many countries (UNECE 2017). Men prefer older ages to get married than women (Eurostat 2020). Studies generally suggest that marriages under the age of 20 are often associated with riskier conditions, the risks reduce over 30 years of age (AMUEDO-DORANTES & KIMMEL 2005; BRAND & DAVIS 2011; SENER & TERZIOĞLU 2008). According to the Turkish Statistical Institute's data, the rate of individuals under the age of 20 among people who got married for the first time in 2020 was 13.73%, 12.30% of these individuals were women, and 1.43% were men (TSI 2021).

Researches indicated that the timing of marriage affects both the quality of the marriage and the individual's well-being (JOHNSON et al. 2017; PEKEL-ULUDAĞLI 2017; SHAUD & ASAD 2020). For instance, it was reported that people who marry early have lower marital satisfaction (DEMİR 2014; HAJIHASANI & SIM 2019; PEKEL-ULUDAĞLI & AKBAŞ 2019a) and a less stable (LEHRER & CHEN 2013), more discordant marriage compared with individuals who marry later in life (ARSHAD et al. 2014; SHAUD & ASAD 2020; SENER & TERZIOĞLU 2008), and also they are more likely to get divorced (WIDYASTARI et al. 2020). Individuals who undertake early adulthood roles such as marriage and having children have lower economic conditions because they do not receive adequate education (FALCI et al. 2010; SHPIEGEL & CASCARDI 2018; TAYLOR 2009) and they are more likely to live in poverty in later years (HAMILTON 2012). These marital problems experienced by people who get married at an early age are likely to stem from negative economic conditions. PEKEL-ULUDAĞLI and AKBAŞ (2019b) revealed that there is no significant difference between individuals who marry early and late in terms of marital satisfaction when income and education were controlled. Also, as an expected consequence of these difficult experiences, more psychological (CARLSON 2012; FAKHARI et al. 2020; PEKEL-ULUDAĞLI & AKBAŞ 2019b) and physical health problems are observed among people who marry at an early age (DUPRE & MEADOWS 2007).

### 4. The present study

In line with the literature summarized above, this study aims to investigate the association between marital satisfaction, age of marriage, SES and perceived

psychological and physical health of individuals in middle adulthood. This study plans to examine middle-aged adults' perceived health in terms of age of marriage, marital satisfaction, and SES. In this context, marriage satisfaction, age of marriage, and SES are expected to be negatively associated with perceived psychological health problems of middle-aged adults, and they are expected to be positively associated with perceived physical health. The other aim of the study is to evaluate whether perceived psychological health plays a mediator role in the association between marital satisfaction, age of marriage, SES and perceived physical health. Marital satisfaction and age of marriage are expected to have a negative effect on perceived psychological health problems, which in turn would negatively impact the perceived physical health. In line with relevant literature (FALCI et al. 2010; SHPIEGEL & CASCARDI 2018), the age at the time of marriage is expected to predict positively SES, which in turn would predict negatively perceived psychological health problems.

## **5. Method**

### **5.1. Participants**

A total of 302 adults (160 females, 142 males) aged between 40–69 years (mean = 49.89,  $S = 6.48$ ) participated in the study. We determined this age range in accordance with the age ranges for middle adulthood in relevant literature and textbooks (e.g., AUGUSTUS-HORVATH & TYLKA 2011; SANTROCK 2018; STEINBERG et al. 2010; SUTTON et al. 2010). All of the participants are married and 96.4% of them have children. The mean of their marital duration is 25.65 ( $S = 8.23$ ). The education level of participants was classified as: 2.6% are literate; 15.2% are primary school, 17.2% are middle school, 25.8% are high school, 35.1% are university graduates, 4% possessing master's and PhD degrees. 58.6% of the participants are employed. Their monthly incomes: 2.9% was 1,000 TL (Turkish lira) and below, 26% was between 1,001-2,000 TL, 40.7% was between 2,001-4,000 TL, 19.8% was between 4,001 - 6,000 TL and 10.6% was 6,001 TL and above. 7.7% of the participants stated they had a psychological disorder and 25.4% reported having a physical illness.

### **5.2. Measures**

The participants' perceived physical and psychological health, marital satisfaction, and the age of marriage were measured using the World Health Organization Quality of Life Measurement Tool, Brief Symptom Inventory, Marriage Life Scale and Demographic Information Form.



*World Health Organization Quality of Life Measurement Tool (WHO-QOL-BREF).* WHOQOL-BREF is a short form of the 'World Health Organization Quality of Life Scale' developed by the World Health Organization (1996). The scale, which consists of 26 items, has a five-point rating ('1 = Very bad to 5 = Very good'; '1 = Not pleased at all to 5 = Very Pleased'; '1 = Not at all to 5 = Infinitely'; '1 = Not at all to 5 = Totally') and high scores received from the scale indicate physical health status (e.g., 'How satisfied are you with your health?'). Adaptation of the scale to Turkish has been performed by ESER and colleagues (1999). It contains four subscales as physical, mental, social and environmental scales. In this study, the physical subscale was used to assess perceived physical health. The Cronbach Alpha score of the scale was .83.

*Brief Symptom Inventory (BSI).* Brief Symptom Inventory is a shortened form of the SCL-90 inventory with 90 items developed by DEROGATIS and MELISARATOS (1983). The scale, which consisted in total of 53 items (e.g., temper outbursts that you cannot control, feeling hopeless about the future) was adapted to Turkish by ŞAHİN and DURAK (1994). The scale has five sub-dimensions including depression, anxiety, negative self-concept, somatization and hostility (anger-aggressiveness), and their Cronbach Alpha scores range from .75 to .87. The scale is a 5-point Likert type ('Not at all (0)' and 'extremely (4)'), and high scores received from the scale indicate the frequency of psychological symptoms in individuals.

*Marriage Life Scale (MLS).* This scale has been developed by TEZER (1996) in order to measure marital satisfaction. The scale consists of a total of 10 items (e.g., 'Most of my expectations from marriage have been realized', 'Our relationship is an ideal husband and wife relationship'). It is a 5-point Likert type (1 = strongly disagree to 5 = strongly agree). High scores obtained from the scale indicate a high level of marital satisfaction. The Cronbach Alpha score of the scale was found to be .88 in the male group and .91 in the female group.

*Demographic Information Form.* A demographic information form has been prepared in order to collect participants' demographic data. The form presents multiple choice and open-ended questions about age, gender, educational status, marital status, individual and family monthly income, age of marriage etc. In order to determine the socioeconomic status, a composite score was formed by using educational status, individual and family monthly income.

### 5.3. Procedure

Research data was collected via the convenient sampling method. Research scales were applied to married individuals aged between 40–69 who live in different districts of Ankara and agreed to voluntarily participate in the study. Prior to implementation, individuals were informed about the aim and significance of the

research and they were asked to answer the scales sincerely. The participants were informed that a research was being conducted on various aspects of adult life such as marriage and health. All scales were self-report measures and participants answered the questionnaires anonymously. After obtaining necessary ethical permissions, the scales were personally implemented to participants in their homes or offices. Implementation of scales took between 20–25 minutes.

## 6. Results

First of all, correlation analysis and descriptive analysis were performed in order to see the relationships between the research variables and the participants' scores. The results have been presented in *Table 1*. Correlation analysis results showed that the relationship between age at the time of marriage and marital satisfaction, and perceived physical health and marital satisfaction, were not significant, but significant correlations did exist between other basic research variables.

Afterwards, a path analysis was conducted in line with the research hypotheses and the proposed model. The path analysis was performed using the AMOS 16.0 (ARBUCKLE 2007). As a result of the correlation analysis, non-significant paths were not added to the model. A priori, it was decided to use  $\chi^2/df$ , the root mean square error of approximation (RMSEA), comparative fit index (CFI), goodness of fit index (GFI), adjustment goodness of fit index (AGFI) to evaluate the fit of the model. In the preliminary analyses, some fit indices were not adequate,  $\chi^2 = 119.77$ ,  $df = 39$ ,  $p = .000$ ,  $\chi^2/df = 3.07$ , RMSEA = .09, CFI = .94, GFI = .93, AGFI = .88. In order to increase the model fit, covariances were added to the error terms of the sub-dimensions of psychological health problems (depression and somatization, negative self-concept and somatization, negative self-concept and hostility, somatization and hostility) in line with modification indexes. After the improvement of the model, it was observed that the research data showed a good fit to the model according to all fit indexes,  $\chi^2 = 84.93$ ,  $df = 36$ ,  $p = .000$ ,  $\chi^2/df = 2.35$ , RMSEA = .07, CFI = .96, GFI = .95, AGFI = .91. Standardized coefficients for the paths in the model have been presented in *Figure 1*. According to this, marital satisfaction was negatively related to perceived psychological health problems ( $\beta = -.23$ ,  $p < .001$ ); age of marriage was positively related to perceived physical health ( $\beta = .15$ ,  $p < .01$ ); and SES ( $\beta = .44$ ,  $p < .001$ ). Perceived psychological health problems was negatively related to perceived physical health ( $\beta = -.46$ ,  $p < .001$ ). SES was negatively related to perceived psychological health problems ( $\beta = -.19$ ,  $p < .01$ ) and positively related to marital satisfaction ( $\beta = .17$ ,  $p < .01$ ). When the indirect relations of the model were considered, the relationship between marital satisfaction and perceived physical health by means of perceived psychological health was significant) .10 (95% CIs [.05, .16],  $p < .001$ ). The relationship between SES and perceived physical health by means of perceived



*Table 1*  
Mean, standard deviation and correlation values of research variables

Variable	PH	PHP	AN	DE	NS	SO	HO	MS	AM	ES	IMI	FMI	Total Mean (S)	Women Mean (S)	Men Mean (S)
PH	-												3.78 (.56)	3.73 (.58)	3.82 (.53)
PHP	-.46***	-											1.66 (.41)	1.66 (.39)	1.65 (.42)
AN	-.38***	.89***	-										1.53 (.43)	1.52 (.42)	1.53 (.44)
DE	-.45***	.92***	.75***	-									1.81 (.52)	1.85 (.51)	1.75 (.53)
NS	-.35***	.89***	.76***	.76***	-								1.63 (.50)	1.60 (.45)	1.65 (.54)
SO	-.50***	.72***	.59***	.65***	.49***	-							1.55 (.42)	1.60 (.45)	1.50 (.38)
HO	-.27***	.74***	.59***	.59***	.61***	.39***	-						1.84 (.51)	1.77 (.47)	1.92 (.54)
MS	.11	-.26***	-.23***	-.28***	-.22***	-.18***	-.16***	-					3.67 (.78)	3.59 (.85)	3.75 (.68)
AM	.24***	-.19***	-.19***	-.19***	-.11	-.23***	-.04	.12	-				24.14 (4.64)	22.57 (4.46)	25.88 (4.22)
ES	.18**	-.21**	-.12*	-.20**	-.12*	-.34**	-.14*	.12*	.41**	-			3.89 (1.23)	3.76 (1.31)	4.05 (1.12)
IMI	.17**	-.19**	-.14*	-.22**	-.10	-.30**	-.07	.11	.33**	.50**	-		3.93 (1.21)	3.67 (1.15)	4.22 (1.21)
FMI	.12	-.17**	-.11	-.17**	-.09	-.25***	-.10	.14*	.29**	.59**	.62**	-	5.48 (1.28)	5.41 (1.26)	5.56 (1.30)

Note. PH: Physical health, PHP: Psychological Health Problems, AN: Anxiety, DE: Depression, NS: Negative Self-Concept, SO: Somatization, HO: Hostility, MS: Marital Satisfaction, AM: Age of Marriage, ES: Educational status, IMI: Individual monthly income, FMI: Family monthly income.

\*\*\*  $p < .001$ ; \*\*  $p < .01$ .

psychological health was significant: .11 (95% CIs [.03, .20],  $p < .01$ ). Lastly, the relationship between age of marriage and perceived psychological health by means of SES was significant: -.10 (95% CIs [-.03, -.21],  $p < .01$ ).

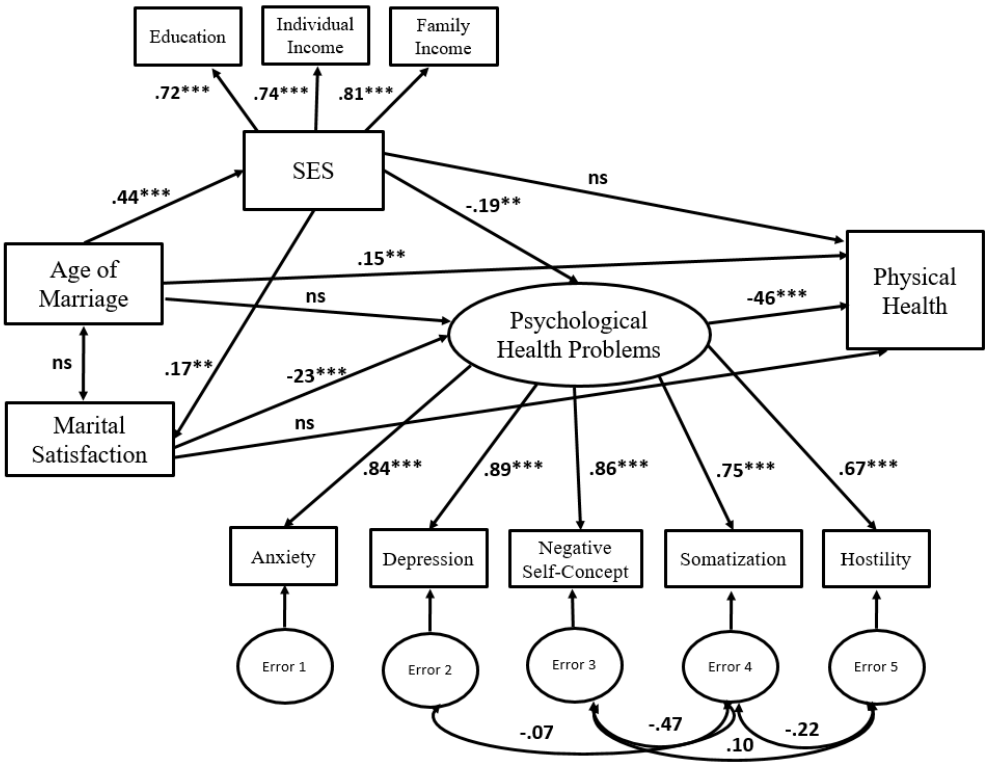


Figure 1

Standardized coefficients for a model of psychological health problems as mediator between age of marriage and, marital satisfaction, SES and physical health

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; ns: nonsignificant.

## 7. Discussion

In this study, conducted with individuals in middle adulthood, the association between marital satisfaction, age of marriage, SES, perceived psychological and physical health have been examined. In line with relevant literature, it was expected that

marital satisfaction, age of marriage, and SES would be positively related to the perceived psychological and physical health of middle-aged adults. In addition, perceived psychological health would have a mediator role in the relationship between marital satisfaction, age of marriage, SES and perceived physical health; also, SES would have a mediator role in the relationship between age of marriage and perceived psychological health. This study's findings showed that these research hypotheses are partially supported. Accordingly, as marital satisfaction and SES have predicted perceived psychological health problems; the age of marriage and perceived psychological health problems have predicted perceived physical health directly. Also, SES has predicted marital satisfaction, and the age of marriage has predicted SES. However, both marital satisfaction and SES have predicted perceived physical health via perceived psychological health problems. The age of marriage has also predicted perceived psychological health through SES.

Previous studies consistently reported that marriage at an early age is related to negative aspects of individuals' lives such as negative well-being (JOHNSON et al. 2017; PEKEL-ULUDAĞLI 2017; SHAUD & ASAD 2020), and individuals who married at an early age experience more psychological problems (e.g., CARLSON 2012; FAKHARI et al. 2020). Individuals who married at a younger age do not have the opportunities to develop their educational and career life sufficiently (FALCI et al. 2010; TAYLOR 2009). Indeed, this study showed that getting married earlier was related to adverse economic conditions in line with other studies (FALCI et al. 2010; SHPIEGEL & CASCARDI 2018). These disadvantaged conditions stemming from early marriage may cause individuals to experience more stress (BELL & LEE 2006; FALCI et al. 2010). The research pointed out that this negative aspect of their lives seems to continue through middle age and was related to their physical health as well as psychological health. The age of marriage has been found to be directly associated with both perceived physical and perceived psychological health by means of SES. Also, adverse socioeconomic conditions were related to increased psychological problems, and these problems predicted worse physical health in midlife. Studies on the age of marriage in the relevant literature revealed the negative consequences of early marriage in many aspects (e.g., CARLSON 2012; JOHNSON et al. 2017; SENER & TERZIOĞLU 2008). The findings of this study also indicated that the risks of life increase due to the fact that getting married early may cause couples to live in more disadvantaged socioeconomic conditions.

Similar findings were also revealed for marital satisfaction in addition to the age of marriage; it was found that having lower marital satisfaction was related to more psychological problems. Marriage is the main form of relationship in the lives of many individuals, and the problems they experience in this relationship can affect their emotional and cognitive processes (SLATCHER 2010). Studies also showed that marriage problems pose an important risk to psychological health (AZIZI et al. 2019; CHOI & MARKS 2008). Individuals who are partnered in a

negative marital relationship suffer from many psychological problems, especially depression (ALIPOUR et al. 2019; CHOI & MARKS 2008; WHISMAN & UEBELACKER 2003).

As marital satisfaction was directly associated with psychological health, it was also associated with perceived physical health by means of perceived psychological health. Conflicts with the spouse may increase the perceived stress level of individuals and induce negative consequences on their health (ROBLES & KIECOLT-GLASER 2003; SLATCHER 2010). Although related literature has shown that psychological health can play both mediator and moderator roles in the association between the quality of marital relationship and physical health (CHEN & AUSTIN 2019; GALINSKY & WAITE 2014), many studies also exist that show they are directly associated (BOOKWALA 2005; GALINSKY & WAITE 2014; GALLO et al. 2003; GRAMES et al. 2008; HAWKINS & BOOTH 2005; LAWRENCE et al. 2019; SOUTH & KRUEGER 2013). However, most of these studies evaluated the quality of marriage in terms of negative aspects of marriage, such as negative spousal behaviors and marital distress. The measurement of marital satisfaction used in this study was obtained using a scale that focused on the positive aspects of marriage. Moreover, marital satisfaction and marital conflict were separately examined in a study, and while marital satisfaction was not found to be associated with physical health, it was found that marital conflict was associated with worse health – especially in men (FAULKNER et al. 2005). In this context, it was deemed beneficial to consider the positive and negative aspects of marriage separately in studies that would evaluate the interaction between marital relationship and health in the future.

Relevant studies demonstrated that marriage at early age presents a risk for the marital adjustment (e.g., ARSHAD et al. 2014; LEHRER & CHEN 2013; PEKEL-ULUDAĞLI & AKBAŞ 2019b; SHAUD & ASAD 2020). However, it was unexpectedly found that the age of marriage was not related to marital satisfaction in this study. The reason for this difference may be the age of the participants. Because the participants were young adults in these studies (PEKEL-ULUDAĞLI & AKBAŞ 2019b; SHAUD & ASAD 2020), while the participants in this research were middle-aged adults. Middle-aged adults possess different life conditions than young adults. For example, marital satisfaction tends to increase in middle adulthood (GORCHOFF et al. 2008). Although marriage at early age negatively affects marital satisfaction in young adulthood, this effect may attenuate in middle age. Also, economic conditions in middle adulthood are better than in other age periods (TWENGE & CAMPBELL 2002). It is possible that the marital problems of individuals who marry at an early age may arise at a higher rate from their inadequate economic conditions (PEKEL-ULUDAĞLI & AKBAŞ 2019b), and economic problems pose a risk for negative interactions between couples (NEPPL et al. 2021). However, the fact remains that socioeconomic conditions still matter in marital relationships in middle-age. This study showed that adverse socioeconomic conditions contribute negatively to marital satisfaction.

## 8. Implications, limitations, future research directions

Although the age of marriage was directly related to perceived physical health, it was seen that the variable that has the main role on perceived physical health was perceived psychological health. As psychological health directly and strongly predicted physical health, both marital satisfaction and SES were related to perceived physical health through perceived psychological health. In this context, it can be said that people who have marital dissatisfaction and economic hardship have greater psychological problems, which in turn pose a risk for their physical health. Therefore, regarding the findings of the related literature, it is thought that both psychological therapy (CLARKE & CURRIE 2009; SAHMELIKOGLU-ONUR et al. 2019) and marital therapy (WHISMAN & UEBELACKER 2003) should be considered especially by middle-aged individuals who have a chronic health problem or disease, and maintaining the treatment in a multi-component nature may provide effective results.

Research findings on the age of marriage have supported the life course health development approach (HALFON & FORREST 2018); it has shown that developmental differences in the lives of individuals at early ages may result in different effects on their health in later ages. Marrying at an earlier age compared to peers not only differentiates individuals' lives in early years, but it is also a phenomenon that produces effects through middle age and has both physical and psychological consequences by SES. According to UNECE (2017), in Albania, Azerbaijan, Turkey, Kyrgyzstan, and Uzbekistan, the number of marriages under 20 years of age is higher than in other countries. As psychological and social effects of getting married at a young age are known, this study's findings showed that these effects also pose similar risks in terms of physical health. In this context, the importance of informing families about the possible risks of early marriage in the regions where marriage age is low emerges again with the results of this research (SANTHYA et al. 2008; UNICEF 2005).

Some limitations should be considered in the evaluation of the study findings. First, research data were obtained through cross-sectional design and evaluated on the basis of correlative relations. Although the proposed model basically demonstrates that the age of marriage and marital satisfaction are related to an individual's health, the opposite direction in the proposed model may be possible. For example, most people who have a chronic illness suffer from psychological problems (FERRO 2016; HU et al. 2016) and marital troubles (CANO et al. 2005; KORPORAAL et al. 2013). Stronger and more confident assessments for the long-term consequences of the age of marriage and marital satisfaction concerning health will be possible through a longitudinal study. In this context, a longitudinal assessment of individuals, especially in terms of the age of marriage from young adult years to middle and late years, will allow us to make clearer interpretations on its consequences on health. Second, in this study, only individuals' own perceptions were used to evaluate marital satisfaction

and their own health. In some studies, both the individual's own and his/her spouses' health and marital perceptions were evaluated, and it was found that a spouse's low marital satisfaction was also associated with the individual's psychological health (GALINSKY & WAITE 2014; MILLER et al. 2013; WANG et al. 2014). Evaluation of the spouse's health in future studies may provide useful information to predict the health of a married individual. Third, marriage and health are multidimensional concepts. Some factors, such as health habits (smoking, malnutrition, etc.), social-cognitive processes, and personality traits are likely to play a role in the evaluation of the relationship between them (KIECOLT-GLASER & NEWTON 2001; MARGELISCH et al. 2015; ROBLES 2014). Also, gender seems to be important in the relationship between marriage and health. Many studies showed that being married is more beneficial for men's physical health (KAPLAN & KRONICK 2006; PLOUBIDIS et al. 2015; WOOD et al. 2007; WONG et al. 2018) and psychological health (TUMIN & ZHENG 2018) rather than women's, although marriage problems affect more women than men (LIU & UMBERSON 2008; LIU & WAITE 2014). However, since the numbers of women and men were not sufficient, analyzes could not be conducted separately by gender in this study. In this context, the possible role of these variables in evaluating the relationship between marriage and health should be considered in future studies. Fourth, many people in the world prefer to cohabit instead of getting married and the number of cohabiting adults is increasing (BROWN et al. 2017). However, since cohabiting people have different life and relationship characteristics, it is controversial how these findings can be generalized to them. Considering different types of relationships in future research may be useful for more representative results. Also, remarriages differ from first marriages in terms of marital quality (FRYE et al. 2020). Therefore, future studies should take into account the possible difference.

As a result, this study has revealed that considering more carefully the marital relationship may be beneficial in order to better understand perceived health during middle age. Especially in terms of age at the time of marriage, displaying the negative aspects of early marriage that persist in middle age is one of the distinctive findings of this study. When individuals get married after becoming mature enough and they have a positive relationship with their spouses, they can have better economic conditions and become psychologically healthier in middle age, which in turn can support them to have better physical well-being. In this context, considering the marital relationship and psychological factors in both treatment and intervention approaches for both young and middle-aged adults may facilitate obtaining more effective results.



## References

- ABBAS, J., M. AQEEL, J. ABBAS, B. SHAHER, A. JAFFAR, J. SUNDAS & W. ZHANG (2019) 'The Moderating Role of Social Support for Marital Adjustment, Depression, Anxiety, and Stress: Evidence from Pakistani Working and Nonworking Women', *Journal of Affective Disorders* 244, 231–38 (<https://doi.org/10.1016/j.jad.2018.07.071>).
- AHNQUIST, J., S.P. WAMALA & M. LINDSTROM (2012) 'Social Determinants of Health – A Question of Social or Economic Capital? Interaction Effects of Socioeconomic Factors on Health Outcomes', *Social Science & Medicine* 74(6), 930–39 (<https://doi.org/10.1016/j.socscimed.2011.11.026>).
- ALIPOUR, Z., A. KAZEMI, G. KHEIRABADI & A.A. ESLAMI (2019) 'Relationship Between Marital Quality, Social Support and Mental Health During Pregnancy', *Community Mental Health Journal* 55, 1064–70 (<https://doi.org/10.1007/s10597-019-00387-8>).
- AMUEDO-DORANTES, C. & J. KIMMEL (2005) 'The Motherhood Wage Gap for Women in the United States: The Importance of College and Fertility Delay', *Review of Economics of the Household* 3, 17–48.
- ARBUCKLE, J.L. (2007) *Amos™ 16.0 User's Guide* (Chicago: SPSS).
- ARNETT, J.J. (2006) Emerging Adulthood: 'Understanding the New Way of Coming of Age' in J.J. ARNETT & J.L. TANNER eds., *Emerging Adults in America: Coming of Age in the 21st century* 3–19 (Washington, DC: APA) (<https://doi.org/10.1037/11381-001>).
- ARSHAD, M., M.N. MOHSIN & K. MAHMOOD (2014) 'Marital Adjustment and Life Satisfaction Among Early and Late Marriages', *Journal of Education and Practice* 5(17), 83–90, retrieved 7 Sep 2021 from <https://core.ac.uk/download/pdf/234635874.pdf>.
- AUGUSTUS-HORVATH, C.L. & T.L. TYLKA (2011) 'The Acceptance Model of Intuitive Eating: A Comparison of Women in Emerging Adulthood, Early Adulthood, and Middle Adulthood', *Journal of Counseling Psychology* 58(1), 110–25 (<https://doi.org/10.1037/a0022129>).
- AZIZI, M., E. FOOLADI, R.J. BELL, F. ELYASI, M. MASOUMI & S.R. DAVIS (2019) 'Depressive Symptoms and Associated Factors among Iranian Women at Midlife: A Community-Based, Cross-Sectional Study', *Menopause* 26(10), 1125–32 (<https://doi.org/10.1097/GME.0000000000001374>).
- BELL, S. & C. LEE (2006) 'Does Timing and Sequencing of Transitions to Adulthood Make a Difference? Stress, Smoking, and Physical Activity among Young Australian Women', *International Journal of Behavioral Medicine* 13, 265–74.
- BOOKWALA, J. (2005) 'The Role of Marital Quality in Physical Health During the Mature Years', *Journal of Aging and Health* 17(1), 85–104 (<https://doi.org/10.1177/0898264304272794>).

- BOOKWALA, J. (2015) 'Marital Relationships and Quality' in S.K. WHITBOURNE, ed., *The encyclopedia of adulthood and aging 1 – 5* (Hoboken: Wiley) (<http://doi.org/10.1002/9781118521373.wbeaa282>).
- BORRELL-CARRIÓ, F., A.L. SUCHMAN & R.M. EPSTEIN (2004) 'The Biopsychosocial Model 25 Years Later: Principles, Practice, and Scientific Inquiry', *The Annals of Family Medicine* 2(6), 576–82 (<https://doi.org/10.1370/afm.245>).
- BRAND, J.E. & D. DAVIS (2011) 'The Impact of College Education on Fertility: Evidence for Heterogeneous Effects', *Demography* 48(3), 863–87 (<https://doi.org/10.1007/s13524-011-0034-3>).
- BROWN, S.L., W.D. MANNING & K.K. PAYNE (2017) 'Relationship Quality Among Cohabiting Versus Married Couples', *Journal of Family Issues* 38(12), 1730–53 (<https://doi.org/10.1177/0192513X15622236>).
- CANO, A., A.B. JOHANSEN & J.D. HANAWALT (2005) 'What Are the Marital Problems of Patients with Chronic Pain?' *Current Pain and Headache Reports* 9, 96–100 (<https://doi.org/10.1007/s11916-005-0045-0>).
- CARLSON, D.L. (2012) 'Deviations from Desired Age at Marriage: Mental Health Differences Across Marital Status', *Journal of Marriage and Family* 74(4), 743–58. (<https://doi.org/10.1111/j.1741-3737.2012.00995.x>).
- CHANNON, M., V. HOSEGOOD & N. MCGRATH (2016) 'A Longitudinal Population-Based Analysis of Relationship Status and Mortality in Kwazulu-Natal, South Africa 2001–2011', *Journal of Epidemiology & Community Health* 70, 56–64 (<https://doi.org/10.1136/jech-2014-205408>).
- CHEN, R. & J.P. AUSTIN (2019) 'Depression as a Moderator and a Mediator of Marital Quality's Effect on Older Adults' Self-Rated Physical Health', *Archives of Gerontology and Geriatrics* 83, 50–54 (<https://doi.org/10.1016/j.archger.2019.03.026>).
- CHOI, H. & N.F. MARKS (2008) 'Marital Conflict, Depressive Symptoms, and Functional Impairment', *Journal of Marriage and Family* 70(2), 377 – 90 (<https://doi.org/10.1111/j.1741-3737.2008.00488.x>).
- CHOI, H., J.B. YORGASON & D.R. JOHNSON (2016) 'Marital Quality and Health in Middle and Later Adulthood: Dyadic Associations', *Journals of Gerontology Series B* 71(1), 154–64 (<https://doi.org/10.1093/geronb/gbu222>).
- CHOPIK, W.J. (2017) 'Associations Among Relational Values, Support, Health, and Well-Being Across the Adult Lifespan', *Personal Relationships* 24(2), 408–22 (<https://doi.org/10.1111/pere.12187>).
- CLARKE, D.M. & K.C. CURRIE (2009) 'Depression, Anxiety and Their Relationship with Chronic Diseases: A Review of the Epidemiology, Risk and Treatment Evidence', *The Medical Journal of Australia* 190(S7), S54 – S60 (<https://doi.org/10.5694/j.1326-5377.2009.tb02471.x>).
- DEMİR, E. (2014) *Farklı denetim odağına sahip evli bireylerin evlilik doyumlarının incelenmesi* [A study on marital satisfaction of married individuals with different

- locus of control] (Master thesis, Gazi University, Ankara) retrieved from <https://tez.yok.gov.tr/UlusalTezMerkezi/>.
- DEROGATIS, L.R. & N. MELISARATOS (1983) 'The Brief Symptom Inventory: An Introductory Report', *Psychological Medicine* 13(3), 595–605 (<https://doi.org/10.1017/S0033291700048017>).
- DIEZ-ROUX, A.V. (2007) 'Integrating Social and Biologic Factors in Health Research: A Systems View', *Annals of Epidemiology* 17(7), 569–74 (<https://doi.org/10.1016/j.annepidem.2007.03.001>).
- DUPRE, M.E. & S.O. MEADOWS (2007) 'Disaggregating the Effects of Marital Trajectories on Health', *Journal of Family Issues* 28(5), 623–52 (<https://doi.org/10.1177/0192513X06296296>).
- ESER, E., H. FIDANER, C. FIDANER, S.Y. ESER, H. ELBI & E. GÖKER (1999) 'WHO-QOL-100 ve WHOQOL-BREF'in psikometrik özellikleri' [Psychometric properties of the WHOQOL-100 and WHOQOL-BREF], [*Journal of Psychiatry, Psychology, Psychopharmacology*] 7(2), 23–40, retrieved 18 Sep 2021 from [https://www.researchgate.net/profile/Erhan-Eser/publication/291870682\\_Whoqol-100\\_and\\_psychometric\\_characteristics\\_of\\_WHOQOL-bref/links/584817e808a696825d91e/Whoqol-100-and-psychometric-characteristics-of-WHOQOL-bref.pdf](https://www.researchgate.net/profile/Erhan-Eser/publication/291870682_Whoqol-100_and_psychometric_characteristics_of_WHOQOL-bref/links/584817e808a696825d91e/Whoqol-100-and-psychometric-characteristics-of-WHOQOL-bref.pdf).
- Eurostat (2020) *Mean Age at First Marriage by Sex*, retrieved 7 Sep 2021 from <https://ec.europa.eu/eurostat/databrowser/view/tps00014/default/table?lang=en>.
- FAKHARI, A., M. FARAHBAKHS, H. AZIZI, E.D. ESMAEILI, M. MIRZAPOUR, V.A. RAHIMI, L. HASHEMI & S. GAFFARIFAM (2020) 'Early Marriage and Negative Life Events Affect on Depression in Young Adults and Adolescents', *Archives of Iranian Medicine* 23(2), 90–98.
- FALCI, C.D., J.T. MORTIMER & H.J. NOEL (2010) 'Parental Timing and Depressive Symptoms in Early Adulthood', *Advances in Life Course Research* 15(1), 1–10. (<https://doi.org/10.1016/j.alcr.2010.05.001>).
- FAULKNER, R.A., M. DAVEY & A. DAVEY (2005) 'Gender-Related Predictors of Change in Marital Satisfaction and Marital Conflict', *The American Journal of Family Therapy* 33(1), 61–83 (<https://doi.org/10.1080/01926180590889211>).
- FERRO, M.A. (2016) 'Major Depressive Disorder, Suicidal Behaviour, Bipolar Disorder, and Generalised Anxiety Disorder Among Emerging Adults with and without Chronic Health Conditions', *Epidemiology and Psychiatric Sciences* 25(5), 462–74 (<https://doi.org/10.1017/S2045796015000700>).
- FRYE, N., L. GANONG, T. JENSEN & M. COLEMAN (2020) 'A Dyadic Analysis of Emotion Regulation as a Moderator of Associations Between Marital Conflict and Marital Satisfaction Among First-married and Remarried Couples', *Journal of Family Issues* 41(12), 2328–55 (<https://doi.org/10.1177/0192513X20935504>).
- GALINSKY, A.M. & L.J. WAITE (2014) 'Sexual Activity and Psychological Health as Mediators of the Relationship Between Physical Health and Marital Quality',

- The Journals of Gerontology: Series B* 69(3), 482–92 (<https://doi.org/10.1093/geronb/gbt165>).
- GALLO, L.C., W.M. TROXEL, K.A. MATTHEWS & L.H. KULLER (2003) ‘Marital Status and Quality in Middle-Aged Women: Associations with Levels and Trajectories of Cardiovascular Risk Factors’, *Health Psychology* 22(5), 453–63 (<https://doi.org/10.1037/0278-6133.22.5.453>).
- GORCHOFF, S.M., O.P. JOHN & R. HELSON (2008) ‘Contextualizing Change in Marital Satisfaction During Middle Age: An 18-Year Longitudinal Study’, *Psychological Science* 19(11), 1194–1200 (<https://doi.org/10.1111/j.1467-9280.2008.02222.x>).
- GRAMES, H. A., R.B. MILLER, W.D. ROBINSON, D.J. HIGGINS & W.J. HINTON (2008) ‘A Test of Contextual Theory: The Relationship Among Relational Ethics, Marital Satisfaction, Health Problems, and Depression’, *Contemporary Family Therapy* 30, 183–98 (<https://doi.org/10.1007/s10591-008-9073-3>).
- HAJIHASANI, M. & T. SIM (2019) ‘Marital Satisfaction Among Girls with Early Marriage in Iran: Emotional Intelligence and Religious Orientation’, *International Journal of Adolescence and Youth* 24(3), 297–306 (<https://doi.org/10.1080/02673843.2018.1528167>).
- HALFON, N. & C.B. FORREST (2018) ‘The Emerging Theoretical Framework of Life Course Health Development’ in N. HALFON, C. FORREST, R. LERNER & E. FAUSTMAN, eds., *Handbook of Life Course Health Development*, 19–46 (Cham: Springer) ([https://doi.org/10.1007/978-3-319-47143-3\\_2](https://doi.org/10.1007/978-3-319-47143-3_2)).
- HALFON, N., C.B. FORREST, R.M. LERNER, E.M. FAUSTMAN, E. TULLIS & J. SON (2018) ‘Introduction to the Handbook of Life Course Health Development’ in N. HALFON, C. FORREST, R. LERNER & E. FAUSTMAN, eds., *Handbook of Life Course Health Development*, 1–16 (Cham: Springer) ([https://doi.org/10.1007/978-3-319-47143-3\\_1](https://doi.org/10.1007/978-3-319-47143-3_1)).
- HAMILTON, V.E. (2012) ‘The Age of Marital Capacity: Reconsidering Civil Recognition of Adolescent Marriage’, *College of William & Mary Law School Faculty Publications* 1430, retrieved 8 Sep 2021 from <https://scholarship.law.wm.edu/facpubs/1430>.
- HAWKINS, D.N. & A. BOOTH (2005) ‘Unhappily Ever After: Effects of Long-Term, Low-Quality Marriages on Well-Being’, *Social Forces* 84(1), 451–71, retrieved 8 Sep 2021 from <https://www.jstor.org/stable/3598312>.
- HOLT-LUNSTAD, J., W. BIRMINGHAM & B.Q. JONES (2008) ‘Is There Something Unique About Marriage? The Relative Impact of Marital Status, Relationship Quality, and Network Social Support on Ambulatory Blood Pressure and Mental Health’, *Annals of Behavioral Medicine* 35(2), 239–44 (<https://doi.org/10.1007/s12160-008-9018-y>).
- HU, S.X.X., W.I. LEI, K.K. CHAO, B.J. HALL & S.F. CHUNG (2016) ‘Common Chronic Health Problems and Life Satisfaction Among Macau Elderly People’, *Inter-*

- national Journal of Nursing Sciences* 3(4), 367–70 (<https://doi.org/10.1016/j.ijnss.2016.10.004>).
- JAREMKA, L.M., R. GLASER, W.B. MALARKEY & J.K. KIECOLT-GLASER (2013) ‘Marital Distress Prospectively Predicts Poorer Cellular Immune Function’, *Psychoneuroendocrinology* 38(11), 2713–19 (<http://dx.doi.org/10.1016/j.psytneu.2013.06.031>).
- JOHNSON, M.D., H.J. KRAHN & N.L. GALAMBOS (2017) ‘Better Late Than Early: Marital Timing and Subjective Well-Being in Midlife’, *Journal of Family Psychology* 31(5), 635–41 (<https://doi.org/10.1037/fam0000297>).
- KAPLAN, R.M. & R.G. KRONICK (2006) ‘Marital Status and Longevity in the United States Population’, *Journal of Epidemiology & Community Health* 60, 760–65 (<https://doi.org/10.1136/jech.2005.037606>).
- KEENAN, K., G.B. PLOUBIDIS, R.J. SILVERWOOD & E. GRUNDY (2017) ‘Life-Course Partnership History and Midlife Health Behaviours in a Population-Based Birth Cohort’, *Journal of Epidemiology & Community Health* 71, 232–38 (<https://doi.org/10.1136/jech-2015-207051>).
- KENDIG, H., P.A. DYKSTRA, R.I. VAN GAALEN & T. MELKAS (2007) ‘Health of Aging Parents and Childless Individuals’, *Journal of Family Issues* 28(11), 1457–86 (<https://doi.org/10.1177/0192513X07303896>).
- KIECOLT-GLASER, J.K. & T.L. NEWTON (2001) ‘Marriage and Health: His and Hers’, *Psychological Bulletin* 127(4), 472–503 (<https://doi.org/10.1037/0033-2909.127.4.472>).
- KIECOLT-GLASER, J.K., S.J. WILSON, M.L. BAILEY, R. ANDRIDGE, J. PENG, L.M. JAREMKA, C.P. FAGUNDES, W.B. MALARKEY, B. LASKOWSKI & M.A. BELURY (2018) ‘Marital Distress, Depression, and a Leaky Gut: Translocation of Bacterial Endotoxin as a Pathway to Inflammation’, *Psychoneuroendocrinology* 98, 52–60 (<https://doi.org/10.1016/j.psytneuen.2018.08.007>).
- KORPORAAL, M., M.I. BROESE VAN GROENOU & T.G. VAN TILBURG (2013) ‘Health Problems and Marital Satisfaction Among Older Couples’, *Journal of Aging and Health* 25(8), 1279–98 (<https://doi.org/10.1177/0898264313501387>).
- LAWRENCE, E.M., R.G. ROGERS, A. ZAJACOVA & T. WADSWORTH (2019) ‘Marital Happiness, Marital Status, Health, and Longevity’, *Journal of Happiness Studies* 20, 1539–61 (<https://doi.org/10.1007/s10902-018-0009-9>).
- LEHRER, E.L. (2008) ‘Age at Marriage and Marital Instability: Revisiting the Becker–Landes–Michael Hypothesis’, *Journal of Population Economics* 21, 463–84 (<https://doi.org/10.1007/s00148-006-0092-9>).
- LEHRER, E.L. & Y. CHEN (2013) ‘Delayed Entry into First Marriage and Marital Stability: Further Evidence on the Becker–Landes–Michael Hypothesis’, *Demographic Research* 29, 521–42 (<https://doi.org/10.4054/DemRes.2013.29.20>).



- LIU, H. & D.J. UMBERSON (2008) 'The Times They Are a Changin': Marital Status and Health Differentials from 1972 to 2003', *Journal of Health and Social Behavior* 49(3), 239–53 (<https://doi.org/10.1177/002214650804900301>).
- LIU, H. & L. WAITE (2014) 'Bad Marriage, Broken Heart? Age and Gender Differences in the Link Between Marital Quality and Cardiovascular Risks among Older Adults', *Journal of Health and Social Behavior* 55(4), 403–23 (<https://doi.org/10.1177/0022146514556893>).
- MARGELISCH, K., K.A. SCHNEEWIND, J. VIOLETTE & P. PERRIG-CHIELLO (2015) 'Marital Stability, Satisfaction and Well-Being in Old Age: Variability and Continuity in Long-Term Continuously Married Older Persons', *Aging & Mental Health* 21(4), 389–98 (<https://doi.org/10.1080/13607863.2015.1102197>).
- MELNIKAS, A.J. & D. ROMERO (2020) 'Ideal Age at First Birth and Associated Factors Among Young Adults in Greater New York City: Findings from the Social Position and Family Formation Study', *Journal of Family Issues* 41(3), 288–311 (<https://doi.org/10.1177/0192513X19875762>).
- MILLER, R.B., T.M. MASON, J.M. CANLAS, D. WANG, D.A. NELSON & C.H. HART (2013) 'Marital Satisfaction and Depressive Symptoms in China', *Journal of Family Psychology* 27(4), 677–82 (<https://doi.org/10.1037/a0033333>).
- NEPPL, T.K., O.N. DIGGS, K.A.S. WICKRAMA & C. WALKER O'NEAL (2021) 'Pathways of the Family Stress Model in Midlife on Physical Health in Later Adulthood', *Journal of Family Psychology* 35(1), 22–32 (<https://doi.org/10.1037/fam0000714>).
- NIEDHAMMER, I., S. KERRAD, S. SCHÜTTE, J.F. CHASTANG & C.C. KELLEHER (2013) 'Material, Psychosocial and Behavioural Factors Associated with Self-Reported Health in the Republic of Ireland: Cross-Sectional Results from the SLAN Survey', *BMJ Open* 3(5), e002797 (<http://dx.doi.org/10.1136/bmjopen-2013-002797>).
- PEKEL-ULUDAĞLI, N. (2017) 'Psikolojik sağlık açısından yetişkin olma' [Becoming adult from the perspective of psychological health], *Psikiyatri ve Güncel Yaklaşımlar* [Current Approaches in Psychiatry] 9(3), 263–83 (<https://doi.org/10.18863/pgy.285949>).
- PEKEL-ULUDAĞLI, N. & G. AKBAŞ (2019a) 'Evlilik ile çocuk sahibi olmaya ilişkin sosyal saat algısı ve evlilik doyumu' [The perception of social clock for marriage and having a child and marital satisfaction], *Sosyal Politika Çalışmaları Dergisi* [Journal of Social Policy Studies] 42, 183–219 (<https://doi.org/10.21560/spcd.vi.546772>).
- PEKEL-ULUDAĞLI, N. & G. AKBAŞ (2019b) 'Young Adults' Perceptions of Social Clock and Adulthood Roles in the Turkish Population', *Journal of Adult Development* 26, 105–15 (<https://doi.org/10.1007/s10804-018-9298-9>).
- PLOUBIDIS, G.B., R.J. SILVERWOOD, B. DESTAVOLA & E. GRUNDY (2015) 'Life-Course Partnership Status and Biomarkers in Midlife: Evidence from the 1958 British Birth Cohort', *American Journal of Public Health* 105, 1596–1603 (<https://doi.org/10.2105/AJPH.2015.302644>).



- PRIGERSON, H.G., P.K. MACIEJEWSKI & R.A. ROSENHECK (1999) 'The Effects of Marital Dissolution and Marital Quality on Health and Health Service Use Among Women', *Medical Care* 37(9), 858 – 73 (<https://doi.org/10.1097/00005650-199909000-00003>).
- ROBLES, T.F. (2014) 'Marital Quality and Health: Implications for Marriage in the 21st Century', *Current Directions in Psychological Science* 23(6), 427–32 (<https://doi.org/10.1177/0963721414549043>).
- ROBLES, T.F. & J.K. KIECOLT-GLASER (2003) 'The Physiology of Marriage: Pathways to Health', *Physiology & Behavior* 79(3), 409–16 ([https://doi.org/10.1016/S0031-9384\(03\)00160-4](https://doi.org/10.1016/S0031-9384(03)00160-4)).
- ROBLES, T.F., R.B. SLATCHER, J.M. TROMBELLO & M.M. MCGINN (2014) 'Marital Quality and Health: A Meta-Analytic Review', *Psychological Bulletin* 140(1), 140–87 (<https://doi.org/10.1037/a0031859>).
- SAHMELIKOGLU-ONUR, O., D.H. ERTEM, C. KARSIDAG, D. ULUDUZ, A. OZGE, A. SIVA & M. GURU (2019) 'An Open/Pilot Trial of Cognitive Behavioral Therapy in Turkish Patients with Refractory Chronic Migraine', *Cognitive Neurodynamics* 13, 183–89 (<https://doi.org/10.1007/s11571-019-09519-y>).
- SANDBERG, J.G., J.B. YORGASON, R.B. MILLER & E.J. HILL (2012) 'Family-To-Work Spillover in Singapore: Marital Distress, Physical and Mental Health, and Work Satisfaction', *Family Relations* 61(1), 1–15 (<https://doi.org/10.1111/j.1741-3729.2011.00682.x>).
- SANTHYA, K.G., S.J. JEJEEBOY & S. GHOSH (2008) *Early Marriage and Sexual and Reproductive Health Risks: Experiences of Young Women and Men in Andhra Pradesh and Madhya Pradesh, India* (New Delhi: Population Council) retrieved 8 Sep 2021 from <https://www.ohchr.org/Documents/Issues/Women/WRGS/ForcedMarriage/NGO/PopulationCouncil22.pdf>.
- SANTROCK, J. (2018) *Life-Span Development* (17<sup>th</sup> ed., New York: Mc Graw Hill).
- SCHNEIDERMAN, N., G. IRONSON & S.D. SIEGEL (2005) 'Stress and Health: Psychological, Behavioral, and Biological Determinants', *Annual Review of Clinical Psychology* 1, 607–28 (<https://doi.org/10.1146/annurev.clinpsy.1.102803.144141>).
- SHAUD, S. & S. ASAD (2020) 'Marital Adjustment, Convergent Communication Patterns, and Psychological Distress in Women with Early and Late Marriage', *Current Psychology* 39, 2326–33 (<https://doi.org/10.1007/s12144-018-9936-1>).
- SHPIEGEL, S. & M. CASCARDI (2018) 'The Impact of Early Childbirth on Socioeconomic Outcomes and Risk Indicators of Females Transitioning out of Foster Care', *Children and Youth Services Review* 84, 1–8 (<https://doi.org/10.1016/j.childyouth.2017.11.001>).
- SLATCHER, R.B. (2010) 'Marital Functioning and Physical Health: Implications for Social and Personality Psychology', *Social and Personality Psychology Compass* 4(7), 455–69 (<https://doi.org/10.1111/j.1751-9004.2010.00273.x>).

- SLATCHER, R.B. & E. SELCUK (2017) 'A Social Psychological Perspective on the Links Between Close Relationships and Health', *Current Directions in Psychological Science* 26(1), 16–21 (<https://doi.org/10.1177/0963721416667444>).
- SOUTH, S.C. & R.F. KRUEGER (2013) 'Marital Satisfaction and Physical Health: Evidence for an Orchid Effect', *Psychological Science* 24(3), 373–78 (<https://doi.org/10.1177/0956797612453116>).
- STEINBERG, L., M.H. BORNSTEIN, D.L. VANDELL & K.S. ROOK (2010) *Life-Span Development: Infancy Through Adulthood* (San Francisco: Wadsworth Cengage Learning).
- SUTTON, C.J., J. MARSDEN, C.L. WATKINS, M.J. LEATHLEY & P. DEY (2010) 'Changing Stroke Mortality Trends in Middle-Aged People: An Age–Period–Cohort Analysis of Routine Mortality Data in Persons Aged 40 to 69 In England', *Journal of Epidemiology & Community Health* 64(6), 523–29 (<https://doi.org/10.1136/jech.2008.086785>).
- ŞAHİN, N.H. & A. DURAK (1994) 'Kısa Semptom Envanteri: Türk gençleri için uyarlanması' [Brief Symptom Inventory-BSI: A study of the Brief Symptom Inventory in Turkish Youth], *Türk Psikoloji Dergisi* [Turkish Journal of Psychology] 9(31), 44–56.
- ŞENER, A. & G. TERZIOĞLU (2008) 'Bazı sosyoekonomik ve demografik değişkenler ile iletişimin eşler arası uyuma etkisinin araştırılması' [Study on some socio-economic and demographic variables and communication effect on the marital adjustment], *Aile ve Toplum* [Journal of Social Policy Studies] 13(13), 7–20, retrieved 10 Sep 2021 from <https://dergipark.org.tr/en/pub/spcd/issue/21113/227411>.
- TAYLOR, J.L. (2009) 'Midlife Impacts of Adolescent Parenthood', *Journal of Family Issues* 30(4), 484–510 (<https://doi.org/10.1177/0192513X08329601>).
- TEZER, E. (1996) 'Evlilik ilişkisinden sağlanan doyum: Evlilik Yaşam Ölçeği' [The satisfaction that is experienced by the marital relationship: Marital Life Scale], *Türk Psikolojik Danışma ve Rehberlik Dergisi* [Turkish Psychological Counseling and Guidance Journal] 2(7), 1 – 7, retrieved 9 Sep 2021 from <https://dergipark.org.tr/tpdrd/issue/21427/229707>.
- TUMIN, D. & H. ZHENG (2018) 'Do the Health Benefits of Marriage Depend on the Likelihood of Marriage?', *Journal of Marriage and Family* 80(3), 622–36 (<https://doi.org/10.1111/jomf.12471>).
- Turkish Statistical Institute (TSI) (2021) 'Marriage and Divorce Statistics 2020', *Turkish Statistical Institute Newsletter* 37211, retrieved 8 Sep 2021 from <https://data.tuik.gov.tr/Bulten/Index?p=Evlenme-ve-Bosanma-Istatistikleri-2020-37211>.
- TWENGE, J.M. & W.K. CAMPBELL (2002) 'Self-Esteem and Socioeconomic Status: A Meta-Analytic Review', *Personality and Social Psychology Review* 6(1), 59–71 ([https://doi.org/10.1207/S15327957PSPR0601\\_3](https://doi.org/10.1207/S15327957PSPR0601_3)).

- UCHINO, B.N. (2006) 'Social Support and Health: A Review of Physiological Processes Potentially Underlying Links to Disease Outcomes', *Journal of Behavioral Medicine* 29(4), 377–87 (<https://doi.org/10.1007/s10865-006-9056-5>).
- UNICEF (2005) *Early Marriage: A Harmful Traditional Practice: A Statistical Exploration* (New York: United Nations Children's Fund), retrieved 10 Sep 2021 from [https://data.unicef.org/wp-content/uploads/2015/12/childmarriage\\_EarlyMarriageFinal\\_92.pdf](https://data.unicef.org/wp-content/uploads/2015/12/childmarriage_EarlyMarriageFinal_92.pdf)
- United Nations Economic Commission for Europe (UNECE) (2017) *Women's Age at First Marriage Varies Widely in the UNECE Region*, retrieved 9 Sep 2021 from <https://www.unece.org/info/media/news/statistics/2017/womens-age-at-first-marriage-varies-widely-in-the-unece-region/doc.html>.
- WAITE, L.J. & E.L. LEHRER (2003) 'The Benefits from Marriage and Religion in the United States: A Comparative Analysis', *Population and Development Review* 29(2), 255–76.
- WAITE, L.J., Y. LUO & A.C. LEWIN (2009) 'Marital Happiness and Marital Stability: Consequences for Psychological Well-Being', *Social Science Research* 38(1), 201–12 (<https://doi.org/10.1016/j.ssresearch.2008.07.001>).
- WANG, Q., D. WANG, C. LI & R.B. MILLER (2014) 'Marital Satisfaction and Depressive Symptoms among Chinese Older Couples', *Aging & Mental Health* 18(1), 11–18 (<https://doi.org/10.1080/13607863.2013.805730>).
- WHISMAN, M.A. & L.A. UEBELACKER (2003) 'Comorbidity of Relationship Distress and Mental and Physical Health Problems' in D.K. SNYDER & M.A. WHISMAN eds., *Treating Difficult Couples: Helping Clients with Coexisting Mental and Relationship Disorders* (New York: Guilford) 3–26.
- WHISMAN, M.A., A.L. GILMOUR & J.M. SALINGER (2018) 'Marital Satisfaction and Mortality in the United States Adult Population', *Health Psychology* 37(11) 1041–44 (<https://doi.org/10.1037/hea0000677>).
- WIDYASTARI, D.A., P. ISARABHAKDI, P. VAPATTANAWONG & M. VÖLKER (2020) 'Marital Dissolution in Postmodern Java, Indonesia: Does Early Marriage Increase the Likelihood to Divorce?', *Journal of Divorce & Remarriage* 61(8), 556–73 (<https://doi.org/10.1080/10502556.2020.1799308>).
- WILSON, C.M. & A.J. OSWALD (2005) 'How Does Marriage Affect Physical and Psychological Health? A Survey of the Longitudinal Evidence', *The Warwick Economic Research Paper Series* 1–31, retrieved 9 Sep 2021 from [https://www.researchgate.net/publication/5135843\\_How\\_Does\\_Marriage\\_Affect\\_Physical\\_and\\_Psychological\\_Health\\_A\\_Survey\\_of\\_the\\_Longitudinal\\_Evidence](https://www.researchgate.net/publication/5135843_How_Does_Marriage_Affect_Physical_and_Psychological_Health_A_Survey_of_the_Longitudinal_Evidence).
- WILSON, S.J., B.E. BAILEY, W.B. MALARKEY & J.K. KIECOLT-GLASER (2021) 'Linking Marital Support to Aging-Related Biomarkers: Both Age and Marital Quality Matter', *The Journals of Gerontology: Series B* 76(2), 273–82 (<https://doi.org/10.1093/geronb/gbz106>).

- WONG, C.W., C.S. KWOK, A. NARAIN, M. GULATI, A.S. MIHALIDOU, P. WU, M. ALASNAG, P.K. MYINT & M.A. MAMAS (2018) 'Marital Status and Risk of Cardiovascular Diseases: A Systematic Review and Meta-Analysis', *Heart* 104(23), 1937–48 (<https://doi.org/10.1136/heartjnl-2018-313005>).
- WOOD, R.G., B. GOESLING & S. AVELLAR (2007) *The Effect of Marriage on Health: A Synthesis of Recent Research Evidence* (Washington: Mathematica Policy Research) retrieved 9 Sep 2021 from <https://aspe.hhs.gov/sites/default/files/private/pdf/75106/report.pdf>.
- World Health Organization (1996) *WHOQOL-BREF: Introduction, Administration, Scoring and Generic Version of the Assessment: Field Trial Version, December 1996* (Geneva: World Health Organization) retrieved 9 Sep 2021 from <https://apps.who.int/iris/handle/10665/63529>.
- World Health Organization (2014) *Basic Documents (48<sup>th</sup> ed.)* retrieved 9 Sep 2021 from <https://apps.who.int/gb/bd/PDF/bd48/basic-documents-48th-edition-en.pdf>.