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THE RELATIONSHIP BETWEEN LEISURE SATISFACTION AND LIFE SATISFACTION: A META-ANALYSIS STUDY OF YEARS 1999-2019

Evren TERCAN KAAS
Sport Sciences Faculty, Akdeniz University
ORCID: 0000-0001-6708-0074

Ebru TARCAN İÇİGEN[1]
Tourism Faculty, Akdeniz University
ORCID: 0000-0001-8765-7686

ABSTRACT

Studies which focused on relations between the perception of leisure and well-being concepts are observed frequently in literature. Studies that measure the relationship between "life satisfaction" and "leisure satisfaction" concepts are prominent within these studies. The aim of this study was to get a cumulative result by integrating the findings of the studies examining the same concepts through meta-analysis. For this purpose, academic studies published between 1999 and 2019 were screened and included from several databases. As a result, 21 studies were found fulfilling the inclusion criterion, set by the researchers, in order to retrieve studies presenting a correlation coefficient between variables "life satisfaction" and "leisure satisfaction". This search resulted with a sample size of 83,632. The overall sample consisted of women, disabled individuals, residents of a defined district, university students, immigrants, and adults from various countries. Studies were analyzed by the free trial version of Comprehensive Meta-Analysis Software 2.0 (CMA 2.0). Findings indicated that leisure satisfaction and life satisfaction showed a positive relationship with a medium level of effect size. Future researchers who will address these concepts in their studies would benefit from conducting moderating analyses to explore how concepts in issue vary depending on the characteristics of the study, such as the sample characteristics.

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[1] Address correspondence to Ebru TARCAN İÇİGEN (PhD), Tourism Faculty, Akdeniz University, Dumlupınar Bulvarı, 07058, Antalya, Turkiye. E-mail: ebrutarcan@akdeniz.edu.tr

INTRODUCTION

After being accepted as a domain of life (Sirgy et al., 2006), the number of studies focusing on the concept of leisure, its benefits and the positive feelings perceived by individuals during participation increased in the literature (Agyar, 2014). When leisure was compared with the daily activities that an individual performs, such as working, sleeping, or cleaning, it was found out to provide more opportunities to increase the life satisfaction. The important point here is that the leisure activity should be chosen freely with an intrinsic motivation (Broughton & Beggs, 2007; Edginton et al., 1998). Studies on leisure and leisure satisfaction were applied to different samples, such as elderly people (Brown & Frankel, 1993); caregivers (Chattillion et al., 2012), adolescents (Chen et al., 2013), university students (Elkins et al., 2007), online game players (Hou et al., 2007), married couples (Johnson et al., 2006), hikers (Kyle et al., 2003), immigrants (Walker et al., 2011), people with psychiatric disabilities (Lloyd et al., 2001), and dancers (Ayyildiz & Gokyürek, 2016). Additionally, studies related with leisure satisfaction were implemented in different settings and countries, such as Australia (Hribernick & Mussap, 2010), Canada (Chun et al., 2012), European Union Countries (Gimenez-Nadal & Sevilla-Sanz, 2011), Taiwan (Chen et al., 2012), China, Japan, and South Korea (Liang et al., 2013). In the related literature, life satisfaction was one of the positive outcomes that leisure satisfaction was often correlated with. Life satisfaction is defined as an evaluative judgement of one's life (Pavot & Diener, 2008), and this concept was related to leisure participation and its positive outcomes. Since leisure satisfaction is one of the most emphasized positive outcomes of participating in leisure activities in literature, the focus of the current study was on the relationship between leisure satisfaction and life satisfaction.

Purpose of The Study

This study takes advantage of meta-analysis by combining multiple studies that shows correlation between these concepts to provide a broader perspective for research in this field. Outcomes were anticipated to contribute to the better understanding of the effect size of the correlation between leisure satisfaction and life satisfaction, and also to provide valuable insights for both academics and practitioners in leisure field.

LITERATURE REVIEW

Beard and Ragheb (1980, pp. 22) stated that in many fields of life, such as job, family or retirement, research was conducted on the evaluation of satisfaction by individuals. To gain more insight on how leisure impacts an individual's life, they suggested a scale to measure "leisure satisfaction" which they defined as positive perceptions of what individuals feel as a result of participating in leisure activities. Soon the concept was embraced by researchers in leisure sciences and was studied many times in different countries in a variety of samples. Employees from Australia were subjects of a study where their leisure satisfaction was compared according to occupations and gender. Males showed higher levels of leisure satisfaction, while occupational groups did not show any significant differences (Kabanof, 1982). Employees were examined in a study inquiring the relationship between job satisfaction, leisure satisfaction and psychological health (Pearson, 1998). Elderly individuals from Canada were inquired about the relationship of leisure opportunities, constraints, motivation, satisfaction, and leisure participation, and it was found that motivation was a predictor of leisure satisfaction, which affected leisure participation (Losier et al., 1993). In a sample of individuals over 65 years old; age, living alone, and health status were found to affect leisure satisfaction (Broughton & Beggs, 2007). When leisure gardening was considered, the participants with a more serious participation level to the activity indicated more satisfaction than the other ones and expressed that gardening contributed to their life satisfaction (Cheng et al., 2010). People with disabilities also constituted the sample for studies concerning leisure satisfaction. One of the studies focused on people with mental disabilities who registered to rehabilitation services in Australia. The results of the study indicated that leisure satisfaction was changing according to the disability and individuals with less social contact had lower leisure satisfaction (Lloyd et al., 2001). In a study applied to disabled employees, leisure satisfaction and leisure constraints were inquired, and differences were obtained according to gender and frequency of leisure participation (Celik et al., 2014). Dementia caregivers were also examined and the results revealed that leisure satisfaction may protect caregivers from a kind of cardiovascular risk (Chattillion et al., 2012). Besides caregivers, patients were also subjects of studies related to leisure satisfaction (Chiang et al., 2011). Young offenders in an inpatient psychiatric hospital were subjects of a study related to their leisure behavior modeling and relationships showed significance between leisure motivation and satisfaction scales, while perceived freedom showed negative correlations (Munchua et al., 2003). The satisfaction derived from

family recreation and family life were also examined. Agate et al. (2009) presented that, positive relationships existed between satisfaction in family leisure and family life. Similarly, positive correlations were found out in a study conducted in Turkey (Aslan, 2009). In addition to studies handling family leisure, a sample of fathers and their adolescent children in United States were investigated according to the effect of father involvement in family leisure and functioning and showed significant results (Buswell et al., 2012). Besides leisure satisfaction concerning families, recreation among couples was also studied. The relationship of leisure participation and leisure satisfaction to marital satisfaction was inquired, and satisfaction with couple leisure was found to be a significant predictor of marital satisfaction (Johnson et al., 2006). Leisure attitude, satisfaction, and perceived freedom were explored among dyads in families and significant correlations were obtained (Siegenthaler & O'Dell, 2000). In a study by Chen et al. (2012), adolescents from Taiwan were the target population and the impact of expectation and experience on service satisfaction was examined. It was found out that adolescents' service quality expectations directly affected their leisure satisfaction. In another study handling adolescents, the concepts of motivation, involvement, and satisfaction in leisure were examined. In the study it was suggested that involvement in leisure had impact on leisure satisfaction, so adolescents should learn to be involved in leisure activities and get family support (Chen et al., 2013). University students are another group whose leisure behavior was frequently studied. Undergraduate students from USA were subjects of a research inquiring the academic stress, anxiety, time management, and leisure satisfaction. According to the results, anxiety, time management, and leisure satisfaction were all related with academic stress (Misra & McKean, 2000). When it comes to leisure satisfaction, residents from different parts of the world were also examined. Samples taken from China, Japan, and North Korea were examined according to the relationship between their leisure satisfaction and perceived life quality. As a result, in South Korea, a positive correlation was detected between the two variables (Liang et al., 2013). In a study applied to Taiwan residents, the relationship between personality traits and leisure satisfaction was measured and extraversion was found to be an enhancer while neuroticism was an inhibitor of leisure satisfaction (Lu & Kao, 2009). A study on German residents examined the retirement period and detected differences according to demographic traits and participation duration in leisure activities (Pinquart & Schindler, 2009).

In order to show positive psychological effects of leisure, subjective well-being, psychological well-being, and life satisfaction were investigated in some studies. Among these, life satisfaction is a concept which was defined as one of the components of subjective well-being and was claimed to represent an overall evaluation of a person's quality of life (Pavot & Diener 2008). According to Diener et al. (1999), subjective well-being is a construct consisting of emotional responses such as positive and negative effects, domain satisfactions and global judgements of life satisfaction. The domain satisfactions mentioned here were family, work, health, leisure, the person him/herself, the group of the individual, and financial situation.

The ongoing research concerning subjective well-being indicated that life satisfaction functioned as a separate component from positive and negative affect (Sirgy et al., 2006). As a separate concept, life satisfaction was explained by researchers theoretically with top-down and bottom-up approaches, where the first explains the concept by traits and the second by satisfaction in multiple domains (Erdogan et al., 2012). Lachman et al. (2018) conducted four survey studies and showed the positive affect of life satisfaction variables mentioned in bottom-up approach. In this study, personality traits mentioned in top-down approach were also effective. The concept of life satisfaction was related with different variables such as demographics (Burnay et al., 2005; Fugl-Meyer et al., 2002; Georgellis et al., 2009). Besides demographic variables, some studies related life satisfaction with negative life events (Jovanovic, 2019; Luhmann et al., 2012). In other studies, life satisfaction was related with traits such as personality traits (Ali, 2019; Gale et al., 2013; Jovanovic, 2019; Wimmelmann et al., 2020). Meantime, the studies following bottom-up approach related life satisfaction with the variables constituting satisfaction domains, such as work (Coad & Binder, 2014; Rode, 2004), family (Schnettler et al., 2020), health (Wang et al., 2020), economic status (Camfield & Esposito, 2014), and leisure (Lachman et al., 2018).

With the introduction of domain satisfaction concept to the bottom-up approach, life satisfaction, by its nature, was related with the concept of leisure satisfaction as it is considered as one of its domains (Sirgy et al., 2006). Even in a study of four surveys conducted by Lachman et al. (2018), leisure satisfaction was found to be the domain that indicated the most considerable effect on life satisfaction among European individuals. The relationship of life satisfaction and leisure satisfaction was studied in different samples such as recreation participants in parks (Beşikçi et al., 2019), young people participating in camps (Ercan, 2016), and university students (Özmaden, 2019). In order to collect the analysis results from

studies that questioned the relationship between two concepts as "life satisfaction" and "leisure satisfaction", and integrate the findings for a systematic examination, the method of meta-analysis was used. The aim of the current study was to provide an overall correlation coefficient for the relationship of these concepts.

METHODOLOGY

In this research, PRISMA guidelines were followed for reporting the results (Moher et al., 2009). This study is a meta-analysis of research published between 1999-2019, reporting the correlation between leisure satisfaction and life satisfaction. Meta-analysis is used for integrating the results of similar studies and providing an estimate of effect size (Lopez-Archeiz et al., 2018; Petrie et al., 2003). Meta-analysis combines results of several studies with their statistical analyses and reinterprets their findings (Dempfle, 2006). Glass (1976, pp. 3) defined meta-analysis as the "analysis of analyses" and this analysis enables researcher to achieve a common judgement after the integration of results from several independent studies belonging to a certain field of research. The aim of conducting a meta-analysis is to combine a huge amount of quantitative findings by considering effect-sizes and to systematically analyze these findings in order to provide meaningful generalizations (Cohen et al., 2007). Effect size was developed by Cohen as a fundamental aspect of meta-analysis and defined as "prevalence of a fact in a population" (Gedik & Üstüner, 2017). Additionally, effect size is a standardized measurement of the observed effect (Field & Gillet, 2010). It is of crucial importance that the statistical methods used in studies are transformed into common measures. Meta-analysis studies focus on integrating results from different types of research (Topçu, 2009). The correlation coefficient (r) calculated between two continuous variables is an effect size index (Borenstein et al., 2013; Gedik & Üstüner, 2017). In this study the six steps defined by Field and Gillett (2010) for a typical meta-analysis study are followed. After the formulation of a research question the following steps are taken in meta-analysis: (1) reviewing the literature, (2) defining and applying inclusion and exclusion criteria, (3) calculating effect sizes for every included study, (4) conducting meta-analysis, (5) publication bias and moderator analyses, and finally (6) reporting the results. In this study, a trial version of CMA 2.0 package was used for data analysis.

Search Strategy and Data Collection

In meta-analysis studies, the screening of published works and unpublished dissertations handling the related research question provides researcher with opportunity to use the results obtained from a bigger sample and see them from a broader perspective (Bakioğlu & Göktaş, 2018; Field & Gillett, 2010). In order to retrieve the research data, Springer, Wiley Online Library, EBSCO Host, Science Direct, Taylor & Francis, Emerald, Jstor, Proquest, Scopus, Ulakbim, Web of Science, and Sobiad databases were examined for "leisure satisfaction" and "life satisfaction" in title and subject terms and "correlation" in whole text. Additionally, Google Scholar was screened for "leisure satisfaction" and "life satisfaction" terms. The data collection period was in February 2019.

Data Coding

A form was used in order to code the data. On this form, year of the research, author or authors of the study, country, language, number of participants, correlation coefficients, characteristics of the sample, ages of participants, study method, and journal of publication were coded. The reliability check was done by controlling the coding of two researchers by using intercoder reliability formula (see Equation 1) (Miles & Huberman, 1994:64), the correspondence between the coders was determined as 100%.

$$\frac{\text{number of agreements}}{(\text{total number of agreements} + \text{disagreements})} x100$$

Equation 1. *Intercoder reliability formula*

Risk of Bias Assessment

In meta-analysis applications, publication bias is a potential problem occurring from the unification of various problems (Çarkungöz & Ediz, 2009). The main reason for this bias is explained by the situation that journals showed a tendency to accept studies mostly having significant results and, on the contrary, to reject studies with non-significant results (Üstün & Eryılmaz, 2014). Publication bias affects the mean effect size and causes an overestimated effect size (Borenstein et al., 2013). In this study, funnel plots, Begg and Mazumdar rank correlation and Rosenthal's fail-safe N were utilized to inquire about publication bias. The plotted effect sizes are displayed against the sample size, standard error, conditional variance, or some other measure in the funnel plot (Field & Gillet, 2010). Results from

small studies are expected scatter widely at the bottom and the spread will narrow among larger studies. With the existence of no bias, the plot is resembling an inverted symmetrical funnel (Sterne & Harbord, 2004). Meanwhile Rosenthal's fail-safe N (FSN) shows how many new studies we should add necessarily to make the effect invalid (Üstün & Eryılmaz, 2004) or in other words, make the result of a significant meta-analysis result insignificant. This is a method for estimating the number of unpublished studies that are necessary to transform a significant population effect size estimate into a non-significant one (Field & Gillet, 2010). Begg and Mazumdar rank correlation method can be listed as another method that can be used to calculate the risk of publication bias as a complementary method to the funnel plots (Begg & Mazumdar, 1994; Guzeller & Celiker, 2020). In this method, after calculating Kendall tau-b coefficient if there is no publication bias, coefficient approximates to 1 and two-tailed p value becomes >0.05 (Celiker et al., 2019).

Inclusion Criteria

The studies selected for meta-analysis were as follows:

- Studies in English and Turkish languages
- Full-text studies
- Studies providing n (sample size) and r (correlation coefficient)
- Studies published between 1999-2019

945 studies obtained from literature research were examined according to inclusion criteria and among them 21 studies met the criteria. The sample sizes and correlation coefficients were obtained from the tables given in the articles.

Exclusion Criteria

At the first step of literature search, 915 articles, 20 dissertations, 1 conference paper and 9 books were obtained. Among these studies, 51 duplicate publications were excluded from the analysis and 894 studies were reached. Among these 894 studies, the ones that were not related with the topics were removed and 225 studies were obtained. After the exclusion of 133 studies that did not have full text articles, the remaining 92 publications were checked if they reported a correlation coefficient between "leisure satisfaction" and "life satisfaction". 71 more studies were excluded according to presence of a correlation report. A total of 21 studies were

included in the meta-analysis (Figure 1). Table 1 shows the characteristics of these 21 studies.

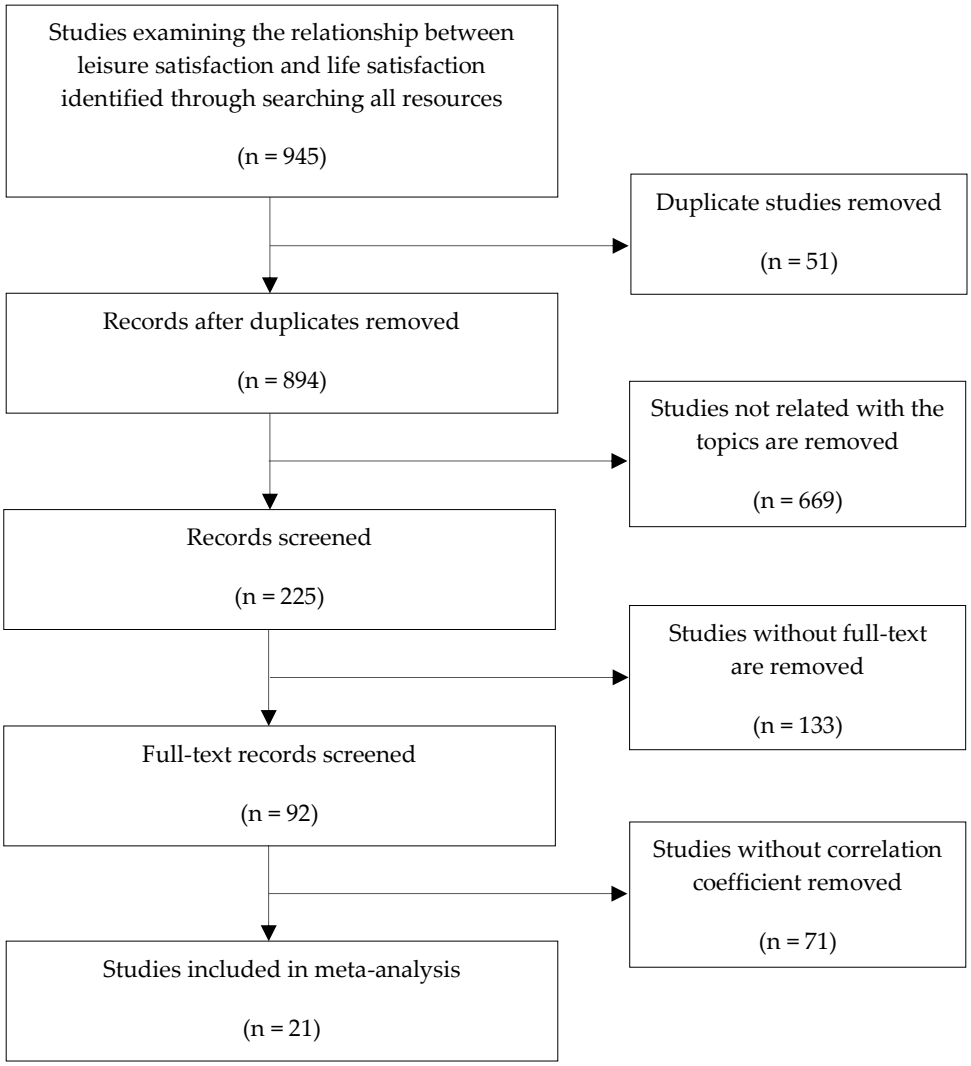

Figure 1. *Inclusion and Exclusion Process Data Flow Diagram According to Prisma Method*

[Source: Moher, D., Liberati, A., Tetzlaff, J., Altman. D. G., The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoSMed, 6*(6), e1000097.]

Calculation of Bias in the Studies

In this study, publication bias was checked by Begg and Mazumdar rank correlation, Rosenthal's fail-safe N and funnel plots.

Table 1. *Characteristics of Studies Included in Meta-Analysis*

No	1
Year, Author	2014, Agyar
Country	Turkey
Language, Type of Study	English, Article
Sample size (N)	1,437
Correlation Coefficient (r)	0.405
Characteristics of Sample, Age of Sample	Women, 18-65
Journal of Publication	Social Indicators Research
No	2
Year, Author	2016b, Kim, Schilling, Kim, & Han
Country	South Korea
Language, Type of Study	English, Article
Sample size (N)	182
Correlation Coefficient (r)	0.635
Characteristics of Sample, Age of Sample	Adults with intellectual disability, 20-69
Journal of Publication	Journal of Mental Health Research in Intellectual Disabilities
No	3
Year, Author	2005, Michalos
Country	Canada
Language, Type of Study	English, Article
Sample size (N)	315
Correlation Coefficient (r)	0.43
Journal of Publication	Social Indicators Research
No	4
Year, Author	2016a, Kim, Roh, Kim, & Irwin
Country	South Korea
Language, Type of Study	English, Article
Sample size (N)	189
Correlation Coefficient (r)	0.631
Characteristics of Sample, Age of Sample	People with intellectual disability, 10-79
Journal of Publication	Therapeutic Recreation Journal
No	5
Year, Author	2010, Hribernik & Mussap
Country	Australia
Language, Type of Study	English, Article (research note)
Sample size (N)	487
Correlation Coefficient (r)	0.61
Characteristics of Sample, Age of Sample	Adults, not stated
Journal of Publication	Annals of Leisure Research
No	6
Year, Author	2013, Yerlisu Lapa
Country	Turkey
Language, Type of Study	English, Article
Sample size (N)	397
Correlation Coefficient (r)	0.479
Characteristics of Sample, Age of Sample	Adults, not stated
Journal of Publication	Procedia - Social and Behavioral Sciences
No	7
Year, Author	2013, Shin & You
Country	South Korea
Language, Type of Study	English, Article
Sample size (N)	3,188
Correlation Coefficient (r)	0.20
Characteristics of Sample, Age of Sample	High School students, not stated
Journal of Publication	Journal of Pacific Rim Psychology

No	8
Year, Author	2008, Gökçe
Country	Turkey
Language, Type of Study	Turkish, Thesis
Sample size (N)	454
Correlation Coefficient (r)	0.055
Characteristics of Sample, Age of Sample	Residents, 15-55
Journal of Publication	
No	9
Year, Author	2004, Lucas
Country	Germany
Language, Type of Study	English, Conference Paper
Sample size (N)	2,451
Correlation Coefficient (r)	0.53
Characteristics of Sample, Age of Sample	Residents, not stated
Journal of Publication	
No	10
Year, Author	2007, Kovacs
Country	USA
Language, Type of Study	English, Thesis
Sample size (N)	420
Correlation Coefficient (r)	0.44
Characteristics of Sample, Age of Sample	College Students, 17-62
Journal of Publication	
No	11
Year, Author	2018, Walker & Kono
Country	Canada
Language, Type of Study	English, Article
Sample size (N)	395
Correlation Coefficient (r)	0.60
Characteristics of Sample, Age of Sample	Employees, 18+
Journal of Publication	The Journal of Positive Psychology
No	12
Year, Author	2017, Walker & Ito
Country	Canada
Language, Type of Study	English, Article
Sample size (N)	115
Correlation Coefficient (r)	0.22
Characteristics of Sample, Age of Sample	Chinese-Canadian immigrants, not stated
Journal of Publication	Leisure Sciences
No	13
Year, Author	2017, Wollbring
Country	Germany
Language, Type of Study	English, Article
Sample size (N)	13,550
Correlation Coefficient (r)	0.289
Characteristics of Sample, Age of Sample	Residents, 18 +
Journal of Publication	Journal of Happiness Studies
No	14
Year, Author	2012, Bann et al.
Country	USA
Language, Type of Study	English, Article
Sample size (N)	5,399
Correlation Coefficient (r)	0.63
Characteristics of Sample, Age of Sample	Residents, 18+
Journal of Publication	Quality of Life Research

No	15
Year, Author	2011, Bellani & D'Ambrosio
Country	9 EU Countries
Language, Type of Study	English, Article
Sample size (N)	49,273
Correlation Coefficient (r)	0.346
Characteristics of Sample, Age of Sample	Residents, not stated
Journal of Publication	Social Indicators Research
No	16
Year, Author	2018, Chang, Lin, & Song
Country	China
Language, Type of Study	English, Article
Sample size (N)	663
Correlation Coefficient (r)	0.395
Characteristics of Sample, Age of Sample	Adults (Residents), 40-65
Journal of Publication	Applied Research Quality of Life
No	17
Year, Author	2010, Cheng, Patterson, Packer, & Pegg
Country	Australia
Language, Type of Study	English, Article
Sample size (N)	433
Correlation Coefficient (r)	0.641
Characteristics of Sample, Age of Sample	Adults (Residents), 55-84
Journal of Publication	Annals of Leisure Research
No	18
Year, Author	2016, Chick et al.
Country	Taiwan
Language, Type of Study	English Article
Sample size (N)	1,766
Correlation Coefficient (r)	0.728
Characteristics of Sample, Age of Sample	Adults,18-59
Journal of Publication	Leisure Sciences
No	19
Year, Author	2012, Gandelman, Piani, & Peree
Country	Uruguay
Language, Type of Study	English, Article
Sample size (N)	1,437
Correlation Coefficient (r)	0.154
Characteristics of Sample, Age of Sample	Adults (Residents), 18+
Journal of Publication	Journal of Happiness Studies
No	20
Year, Author	2014, Grund & Fries
Country	Germany
Language, Type of Study	English
Sample size (N)	253
Correlation Coefficient (r)	0.42
Characteristics of Sample, Age of Sample	Students, not stated
Journal of Publication	Learning and Instruction
No	21
Year, Author	2004, Hawkins, Foose, & Binkley
Country	Australia and USA
Language, Type of Study	English, Article
Sample size (N)	828
Correlation Coefficient (r)	0.521
Characteristics of Sample, Age of Sample	Adults, 50-90
Journal of Publication	World Leisure Journal

RESULTS

Meta-Analysis Results

According to Table 2, the effect size level of 21 correlation reporting studies was r=0.463. The effect size level can be accepted as medium according to Cohen's effect size classification. As a result, the obtained effect size indicated that the two variables: life satisfaction and leisure satisfaction affected each other positively.

Table 2. *Findings of Meta-Analysis Results for the Correlation Between Life Satisfaction and Leisure Satisfaction*

Number of studies	Total sample size	r	95% CI	p	I^2
21	83632	0.463	0.394; 0.526	0.00	98.95

Study Name	Statistics for each study					Correlation and 95%CI
	Correlation	Lower Limit	Upper limit	Z-Value	p-Value	
Ağyar (2014)	0,405	0,361	0,447	16,269	0,000	
Kim et all.(2016)	0,635	0,539	0,714	10,031	0,000	
Michalos (2005)	0,430	0,335	0,516	8,123	0,000	
Kim,Roh et all.(2016)	0,631	0,537	0,710	10,134	0,000	
Hribernick&Mussap(2010)	0,610	0,551	0,663	15,596	0,000	
Yerlisu Lapa(2013)	0,479	0,399	0,551	10,355	0,000	
Shin&You (2013)	0,200	0,166	0,233	11,441	0,000	
Gökçe(2008)	0,055	-0,037	0,146	1,169	0,242	
Lucas(2004)	0,530	0,501	0,558	29,199	0,000	
Kovacs(2007)	0,440	0,359	0,514	9,643	0,000	
Walker&Kono(2018)	0,600	0,533	0,660	13,724	0,000	
Walker&Ito(2017)	0,220	0,038	0,388	2,367	0,018	
Wolbring(2017)	0,289	0,273	0,304	34,624	0,000	
Bann et all.(2012)	0,630	0,614	0,646	54,463	0,000	
Bellani&D'Ambrosio(2011)	0,346	0,338	0,354	80,107	0,000	
Chang et all.(2018)	0,395	0,329	0,457	10,731	0,000	
Cheng et all.(2010)	0,641	0,582	0,693	15,757	0,000	
Chick et all.(2016)	0,728	0,705	0,749	38,816	0,000	
Gandelman et all.(2011)	0,154	0,103	0,204	5,878	0,000	
Grund&Fries(2014)	0,420	0,313	0,517	7,079	0,000	
Hawkins et al.(2004)	0,521	0,470	0,569	16,593	0,000	
	0,463	0,394	0,526	11,694	0,000	

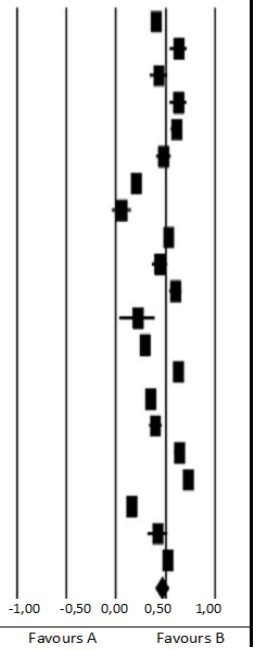

Figure 2. *Forest Plot for Meta-Analysis of Included Studies*

Effect Sizes

Figure 2 presents the Forest plot of meta-analysis results of 21 studies examining the correlation between leisure satisfaction and life satisfaction. It could be observed from the figure that the correlation values changed between 0.055 and 0.728. Calculations made under random effects model

shows that the effect size of the 21 studies was 0.463 in the positive direction (95% CI: 0.394-0.526).

Publication Bias

Figure 3 shows Funnel Plot of the included studies. When the funnel plot was examined for testing publication bias, all the studies were found to be distributed at the middle or top parts of the plot, which indicated that publication bias was neglectable. In order to get more precise results, funnel plot analysis was supported by Begg and Mazumdar rank correlation methods and Rosenthal's fail-safe N.

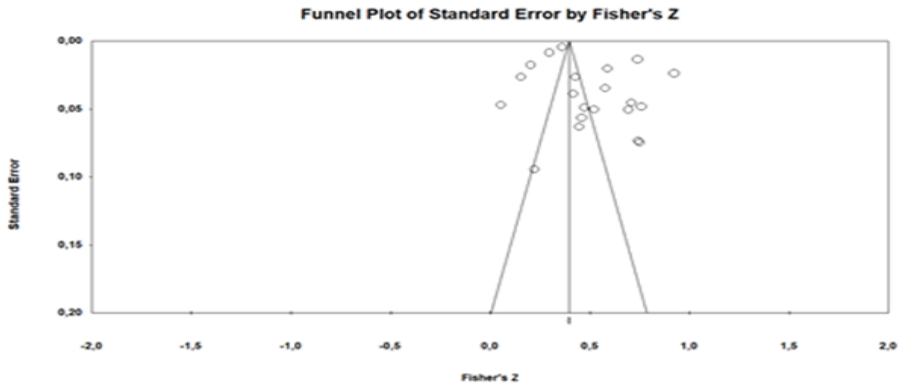

Figure 3. *Funnel Plot*

Table 3 presents Rosenthal's fail-safe n calculations for the 21 studies included in this study. According to the results, fail safe number derived from this meta-analysis study was 2,069. In order to change significant p value ($p<0.001$) to $p>0.05$ value obtained in this study or make the meta-analysis result insignificant, 2,069 studies with null effect size were needed. That means if we want to make the findings of these 21 studies invalid, 2,069 studies with opposite results were required. Another method used for publication bias was Begg and Mazumdar rank correlation test. According to the insignificant result of this test's Kendall's tau-b coefficient, the studies are proven to be free from publication bias (tau-b=0.191; $p>.05$).

Table 3. *Rosenthal's Fail-Safe N Calculations for the Included Studies*

Z-value for observed studies	87.75
P-value for observed studies	0.00
Alpha	0.05
Tails	2.000
Z for alpha	1.96
Number of observed studies	21
Fail-safe number	2069.00
(Number of missing studies that would bring p-value > alpha)	

Heterogeneity Tests

Testing heterogeneity is important in meta-analysis as it indicates the existing moderator variables, and it is one of the assumptions of random-effects model used in meta-analysis. In this study, Q statistic was used to test the null hypothesis that included studies sharing a common effect size (Borenstein et al., 2013; Üstün & Eryılmaz, 2014).

According to the results of heterogeneity tests presented in Table 4, Q value was 1,901.9. Chi-square value with alpha= 0.05 and degrees of freedom= 20 taken from Chi-square table was 31.410.

Table 4. *Heterogeneity Test Results*

Q	Df (Q)	P	I^2
1901.93	20	0.00	98.95

Q value (1,901.93) exceeded Chi-square value, (31.410), exhibiting that the distribution of effect size was heterogenous. The random effects model was used for the interpretation of the results because of the existence of heterogeneity. Another statistic used in measuring heterogeneity was I^2 test. According to Higgins et al. (2003), 25% showed low, 50% moderate, and 75% high level of heterogeneity, indicating that the I^2 result in this study showed high level of heterogeneity. Meta-analysis results are in Table 2.

DISCUSSION AND CONCLUSION

A meta-analysis that examines the relationship between leisure satisfaction and life satisfaction is featured in this study. The aim of the study was to consolidate the results of other studies that measures the correlation between leisure satisfaction and life satisfaction in different populations in order to achieve an overarching analysis with substantially more statistical power than any individual analysis solely based on one single study. By using meta-analysis, the results of the studies examining relationship between life satisfaction and leisure satisfaction were further interpreted, and referring to the results, a final judgement concerning this relationship was obtained. For this purpose, 21 studies which fulfilling the pre-defined criteria were examined. 18 of these studies were articles and 3 were theses. 20 of these studies were English and 1 was Turkish. These studies provided a sample size of 83,632. The samples in the included studies belonged to various groups such as women, disabled individuals, residents of a certain district, immigrants, and adults from different countries. Except 1 study, in all the other studies multivariate statistical methods were utilized. The

study analysis was conducted by a trial version of CMA 2.0 meta-analysis package. Results of random effects model were interpreted due to the heterogeneity test values. The findings of the study indicated that leisure satisfaction and life satisfaction showed a positive relationship with a medium level of effect size. In literature, besides the analyzed 21 studies, there are other studies showing positive correlation results of life satisfaction with overall leisure satisfaction (Beşikçi et al.,2019) or with subscales of leisure satisfaction (Özmaden, 2019).

Research Limitations

Although this study brings an integrated point of view to the correlation of life satisfaction to leisure satisfaction and has the advantage of reinterpretation of various studies' results, there are some limitations mostly resulting from the criteria settled by the researchers. Thus, number of the studies was too limited to conduct moderator analyses. The analysis included only studies of the last 20 years. Language limitations and accessibility to full text were the other causes of the study's limitations. Finally, studies published after the data collection period of this study were not included in meta-analysis.

Recommendations

Recommendations are presented here for future research. In order to increase the power of the studies, the criteria of the "Year of publication" could be widened. Researchers who are interested in these concepts are recommended to conduct a moderating analysis to investigate whether the relationship between the abovementioned concepts vary depending on the characteristics of the study, such as the characteristic of the sample. For more detailed information in the field of leisure, meta-analysis studies could be conducted for different aspects of leisure related with positive or negative psycho-social perceptions.

REFERENCES

Agate, J. R., Zabriskie, R. B., Agate, S. T., & Roff, R. (2009). Family leisure satisfaction and satisfaction with family life. *Journal of Leisure Research, 41*(2), 205-223.

Agyar, E. (2014). Contribution of perceived freedom and leisure satisfaction to life satisfaction in a sample of Turkish Women. *Social Indicators Research, 116*, 1-15.

Ali, I. (2019). Personality traits, individual innovativeness and satisfaction with life. *Journal of Innovation & Knowledge, 4*, 38-46.

Aslan, N. (2009). An examination of family leisure and family satisfaction among traditional Turkish families. *Journal of Leisure Research, 41*(2), 157-176.

Ayyildiz, T., & Gokyürek, B. (2016). Examination of leisure satisfaction levels of individuals participating in recreative dance activities. *Ovidius University Annals, Series Physical Education and Sport Science, Movement and Health, 16*(2), 147-155.

Bann, C. M., Kobau, R., Lewis, M. A., Zack, M. M., Luncheon, C., & Thompson, W. W. (2012). Development and psychometric evaluation of the public health surveillance well-being scale. *Quality of Life Research, 21*, 1031-1043.

Bakioğlu, A., & Göktaş, E. (2018). Bir eğitim politikası belirleme yöntemi: Meta analiz. *Medeniyet Eğitim Araştırmaları Dergisi, 1*(2), 35-54.

Beard, J. G., & Ragheb, M. G. (1980). Measuring leisure satisfaction. *Journal of Leisure Research, 1*, 20-33.

Begg, C. B., & Mazumdar, M. (1994). Operating characteristics of a rank correlation test for publication bias, *Biometrics, 50*(4), 1088-1101.

Bellani, L., & D'ambrioso, C. (2011). Deprivation, social exclusion and subjective well-being. *Social Indicators Research, 104*, 67-86.

Beşikçi, T., Yerlisu Lapa, T., & Güzel, P. (2019). Investigating the relationships between life satisfaction and leisure satisfaction on individuals interested in outdoor recreation: A sample of parks in London. *Annals of Dunarea de Jos University of Galati, 15*, 8-12.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2013). *Introduction to Meta-Analysis* (S. Dinçer, *Translator*). Ankara: Anı Publications.

Broughton, K., & Begss, B. A. (2007). Leisure satisfaction of older adults. *Activities, Adaptation and Aging, 31*(1), 1-18.

Brown, B. A., & Frankel, B. G. (1993). Activity through the years: Leisure, leisure satisfaction and life satisfaction. *Sociology of Sport Journal, 10*, 1-17.

Burnay, N., Kiss, P., & Malchaire, J. (2005). Sociability, life satisfaction and mental health according to age and (un)employment Status. *International Congress Series, 1280*, 345-352.

Buswell, L., Zabriskie, R. B., Lundberg, N., & Hawkins, A. J. (2012). The relationship between father involvement in family leisure and family functioning: The importance of daily family leisure. *Leisure Sciences, 34*, 172-190.

Camfield, L., & Esposito, L. (2014). A cross-country analysis of perceived economic status and life satisfaction in high- and low-income countries. *World Development, 59*, 212-223.

Çarkungöz, E., & Ediz, B. (2009). Meta Analizi. *Uludağ University, Journal of Faculty of Veterinary, 28*(1), 33-37.

Celik, G., Tercan, E., & Yerlisu, T. (2014). Leisure constraints and leisure satisfaction in the recreational activities of employees with disabilities. *South African Journal for Research in Sport, Physical Education and Recreation, 36*(2), 33-46.

Celiker, N., Ustunel, M. F., & Guzeller, C. O. (2019). The relationship between emotional labour and burnout: a meta-analysis, *Anatolia, 30*(3), 328-345.

Chang, P. J., Lin, Y., & Song, R. (2018). Leisure satisfaction mediates the relationships between leisure settings, subjective well-being and depression among middle-aged adults in urban China. *Applied Research Quality Life, 14*, 1001-1017.

Chattillion, E. A., Mausbach, B. T., Roepke, S. K., Von Känel, R.,..., & Granti, I. (2012). Leisure activities, caregiving demands and catecholamine levels in dementia caregivers. *Psychology & Health, 27*(10), 1134-1149.

Chen, C-H., Chang, Y-H., & Fan, F-C. (2012). Adolescents and leisure activities: The impact of expectations and experience on service satisfaction. *Social Behavior and Personality, 40*(2), 259-266.

Chen, Y-C., Li, R-H., & Chen, S-H. (2013). Relationships Among Adolescents' Leisure Motivation, Leisure Involvement, and Leisure Satisfaction: A Structural Equation Model. *Social Indicators Research, 110*, 1187-1199.

Cheng, E. H-P., Patterson, I., Packer, J., & Pegg, S. (2010). Identifying the satisfactions derived from leisure gardening by older adults. *Annals of Leisure Research, 13*(3), 395-419.

Chick, G., Hsu, Y-C., Yeh, C-K., Hsieh, C-M., Bae, S. Y., & Iarmolenko, S. (2016). Cultural Consonance in Leisure, Leisure Satisfaction, Life Satisfaction, and Self-rated Health in Urban Taiwan. *Leisure Sciences, 38*(5), 402-423.

Chiang, L-M., Casebolt, K., Tan, J., Lankford, S. V., & Wilson, J. (2011). A Pilot Study of an instrument measuring leisure satisfaction and life satisfaction in an outpatient leisure activity program. *Therapeutic Recreation Journal, 45*(3), 234-255.

Chun, S., Lee, Y., Kim, B., & Heo, J. (2012). The contribution of leisure participation and leisure satisfaction to stress-related growth. *Leisure Sciences, 34*, 436-449.

Coad, A., & Binder, M. (2014). Causal linkages between work and life satisfaction and their determinants in a structural VAR approach. *Economic Letters, 124*, 263-268.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. London: Routledge Falmer.

Dempfle, A. (2006). *Evaluation of methods for meta-analysis of genetic linkage studies for complex diseases and application to genome scans for asthma and adult height* (Unpublished doctoral dissertation). Phillips University, Marburg, Germany.

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being three decades of progress. *Psychological Bulletin, 125*, 276-302.

Edginton, C. R., Jordan, D. J., Degraaf, D. G., & Edginton, S. R. (1998). *Leisure and Life Satisfaction: Foundational Perspectives* (2nd ed.). Boston, MA: McGraw-Hill.

Elkins, D. J., Beggs, B. A., & Choutka, E. (2007). The contribution of constraint negotiation to the leisure satisfaction of college students in campus recreational sports, *Recreational Sport Journal, 31*, 107-118.

Ercan, P. (2016). An analysis on the level of leisure satisfaction and the level of satisfaction with life of young people who attend sport education camps in nature. *Educational Research and Reviews. 11*(8), 834-841.

Erdogan, B., Bauer, T. N., Truxillo, D. M., & Mansfield, L. R. (2012). Whistle while you work: a review of the life satisfaction literature. *Journal of Management, 38*(4), 1038-1083.

Field, A. P., & Gillett, R. (2010). How to do a meta-analysis. *British Journal of Mathematical and Statistical Psychology, 63*(3), 665-694.

Fugl-Meyer, A. R., Melin, R., & Fugl-Meyer, S. (2002). Life satisfaction in 18 to 64-year-old Swedes: In relation to gender, age, partner and immigrant status. *Journal of Rehabilitation Medicine, 34*, 239-246.

Gale, C. R., Booth, T., Mottus, R., Kuh, D., & Deary, J. J. (2013). Neuroticism and extraversion in youth predict mental wellbeing and life satisfaction 40 years later. *Journal of Research in Personality, 47*, 687-697.

Gandelman, N., Piani, G., & Ferre, Z. (2012). Neighborhood determinants of quality of life. *Journal of Happiness Studies, 13*, 547-563.

Gedik, A., & Üstüner, M. (2017). Correlation between organizational commitment and job satisfaction in educational organizations: A Meta analysis. *E-International Journal of Educational Research, 8*(2), 41-57.

Georgellis, Y., Tsitsianis, N., & Yin, Y. P. (2009). Personal values as mitigating factors in the link between income and life satisfaction: Evidence from the European social survey. *Social Indicators Research, 91*, 329-344.

Gimenez-Nadal, J. J., & Sevilla-Sanz, A. (2011). The time-crunch paradox, *Social Indicators Research, 102*, 181-196.

Glass, G. V. (1976). Primary, secondary, and meta-analysis of research. *Educational Researcher, 5*(10), 3-8.

Gökçe, H. (2008). *Serbest zaman doyumunun yaşam doyumu ve sosyo-demografik değişkenlerle ilişkisinin incelenmesi* (Unpublished master thesis). Pamukkale University, Denizli, Turkey.

Grund, A., & Fries, S. (2014). Study and leisure interference as mediators between students' self-control capacities and their domain-specific functioning and general well-being. *Learning and Instruction, 31*, 23-32.

Guzeller, C. O., & Celiker, N. (2020). Examining the relationship between organizational commitment and turnover intention via a meta-analysis, *International Journal of Culture, Tourism and Hospitality Research, 14*(1), 102-120.

Hawkins, B., Foose, A. K., & Binkley, A. L. (2004). Contribution of leisure to the life satisfaction of older adults in Australia and the United States. *World Leisure Journal, 46*(2), 4-12.

Higgins, J. P. T., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *British Medical Journal, 327*, 557-560.

Hou, J-J., Tu, H. H-J., & Yang, M-F. (2007). Agreeableness and leisure satisfaction in the context of online games. *Social Behavior and Personality, 35*(10), 1379-1384.

Hribernick, J., & Mussap, A. J. (2010). Research note: Leisure satisfaction and subjective wellbeing. *Annals of Leisure Research, 13*(4), 701-708.

Johnson, H. A., Zabriskie, R. B., & Hill, B. (2006). The contribution of couple leisure involvement, leisure time and leisure satisfaction to marital satisfaction. *Marriage& Family Review, 40*(1), 69-91.

Jovanovic, V. (2019). Adolescent life satisfaction: The role of negative life events and the Big Five personality traits. *Personality and Individual Differences, 151*, 1-5.

Kabanof, B. (1982). Occupational and sex differences in leisure needs and leisure satisfaction. *Journal of Occupational Behaviour, 3*, 233-245.

Kim, J., Roh, E. Y., Kim, G., & Irwin, L. (2016a). Understanding the relationships between leisure satisfaction, self-esteem, family satisfaction, and life satisfaction among Korean individuals with intellectual disability. *Therapeutic Recreation Journal, 1*(4), 265-276.

Kim, J., Schilling, M. L., Kim, M., & Han, A. (2016b). Contribution of leisure satisfaction, acceptance disability, and social relationship to life satisfaction among Korean individuals with intellectual disability. *Journal of Mental Health Research in Intellectual Disabilities, 9*(3):157-170.

Kovacs, A. (2007). *The leisure personality: relationships between personality, leisure satisfaction, and life satisfaction* (Unpublished doctorate thesis). Indiana University, Indiana, USA.

Kyle, G., Graefe, A., & Manning, R. (2003). Satisfaction derived through leisure involvement and setting attachment. *Leisure/Loisir, 28*(3-4), 277-305.

Lachman, B., Sariyska, R., Kannen, C., Blaszkiewicz, K.,…, & Montag, C. (2018). Contributing to overall life satisfaction: personality traits versus life satisfaction variables revisited—Is replication impossible?. *Behavioral Sciences, 8*(1), 1-23.

Liang, J., Yamashita, T., & Brown, J. S. (2013). Leisure satisfaction and quality of life in China, Japan and South Korea: A comparative study using Asia Barometer 2006. *Journal of Happiness Studies, 14*, 753-769.

Lloyd, C., King, R., Lampe, J., & Mcdougall, S. (2001). The leisure satisfaction of people with psychiatric disabilities. *Psychiatric Rehabilitation Journal, 25*(2), 107-113.

Lopez-Archeiz, F. J., Bellostas, A. J., & Rivera, P. (2018). Twenty years of research on the relationship between economic and social performance: A meta-anaylsis approach. *Social Indicators Research, 140*, 453-484.

Losier, G. F., Bourque, P. E., & Vallerand, R. J. (1993). A motivational model of leisure participation in the elderly. *The Journal of Psychology, 127*(2), 153-170.

Lu, L., & Kao, S-F. (2009). Direct and indirect effects of personality traits on leisure satisfaction: evidence from a national probability sample in Taiwan. *Social Behavior and Personality, 37*(2), 191-192.

Lucas, R. E. (2004). Top-Down and Bottom-Up Models of Life Satisfaction Judgments. *Proceedings of the 6th International German Socio-Economic Panel Study User Conference*, 1-44.

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Perspectives in Social Psychology, 102*(3), 592-615.

Michalos, A. C. (2005). Arts and the quality of life: An exploratory study. *Social Indicators Research, 71*, 11-59.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand.

Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety, time management and leisure satisfaction. *American Journal of Health Studies, 16*(1), 41-51.

Moher D., Liberati A., Tetzlaff J., Altman, D. G., & The Prisma Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med 6*(6), e1000097. Retrieved October 22, 2020 from http://www.equator-network.org/reporting-guidelines/prisma/

Munchua, M. M., Lesage, D. M., Reddon, J. R., & Badham, T. D. (2003). Motivation, satisfaction, and perceived freedom: a tri-dimensional model of leisure among young offenders. *Journal of Offender Rehabilitation, 38*(1), 53-64.

Özmaden, M. (2019). The investigation of the relationship between university students' leisure and life satisfaction levels. *International Journal of Progressive Education,15*(2), 91-103.

Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. *The Journal of Positive Psychology, 3*(2), 137-152.

Pearson, Q. M. (1998). Job satisfaction, leisure satisfaction and psychological health. *The Career Development Quarterly, 46*, 416-426.

Petrie, A., Bulman, J. S., & Osborn, J. F. (2003). Further statistics in dentistry Part 8: Systematic reviews and meta-analyses. *British Dental Journal, 194*(2), 73-78.

Pinquart, M., & Schindler, I. (2009). Change of leisure satisfaction in the transition to retirement: A Latent-Class analysis. *Leisure Sciences, 31*, 311-329.

Rode, J. C. (2004). Job satisfaction and life satisfaction revisited: A longitudinal test of an integrated model. *Human Relations, 57*(9), 1205-1230.

Schnettler, B., Miranda-Zapata, E., Grunert, K. G., Grønhøj, A., …, & Hueche, C. (2020). Satisfaction with life, family and food in adolescents: Exploring moderating roles of family-related factors. *Current Psychology*, Advance online publication.

Shin, K., & You, S. (2013). Leisure type, leisure satisfaction and adolescents' psychological wellbeing. *Journal of Pacific Rim Psychology, 7*(2), 53-62.

Siegenthaler, K. L., & O'dell, I. (2000). Leisure attitude, leisure satisfaction, and perceived freedom in leisure within family dyads. *Leisure Sciences, 22*, 281-296.

Sirgy, M. J., Michalos, A. C., Ferriss, A. L., Easterlin, R. A., Patrick, D., & Pavot, W. (2006). The quality-of-life (QOL) research movement: Past, present and future, *Social Indicators Research, 76*, 343-465.

Sterne, J. A. C., & Harbord, R. M. (2004). Funnel plots in meta-analysis. *The Stata Journal, 4*(2), 127-141.

Topçu, P. (2009). *Cinsiyetin bilgisayar tutumu üzerindeki etkisi: Bir meta analiz çalışması* (Unpublished master thesis). Marmara University, İstanbul, Turkey.

Üstün, U., & Eryilmaz, A. (2014). A research methodology to conduct effective research syntheses: Meta-Analysis. *Education and Science, 39*(174), 1-32.

Yerlisu Lapa, T. (2013). Life satisfaction, leisure satisfaction and perceived freedom of park recreation participants. *Procedia - Social and Behavioral Sciences, 93*, 1985-1993.

Walker, G. J., Halpenny, E., & Deng, J. (2011). Leisure satisfaction and acculturative stress: The case of Chinese-Canadian Immigrants, *Journal of Leisure Research, 43*(2), 226-245.

Walker, G. J., & Ito, E. (2017). Mainland Chinese Canadian immigrants' leisure satisfaction and subjective well-being: Results of a two-year longitudinal study. *Leisure Sciences, 39*(2), 174-185.

Walker, G. J., & Kono, S. (2018). The effects of basic psychological need satisfaction during leisure and paid work on global life satisfaction. *The Journal of Positive Psychology, 13*(1), 36-47.

Wang, C., Liu, J., Pu, R., Li, Z.,…, & Tang, S. (2020). Determinants of subjective health, happiness, and life satisfaction among young adults (18-24 Years) in Guyana. *BioMed Research International*, 1-14.

Wollbring, T. (2017). Home sweet home! Does moving have (lasting) effects on housing satisfaction?. *Journal of Happiness Studies. 8*, 1359-1375.

Wimmelmann, C. L., Mortensena, E. L., Hegelunda, E. R., Folkerd, A. P., Strizzia, J. M., Dammeyerc, J., & Flensborg-Madsena, T. (2020). Associations of personality traits with quality of life and satisfaction with life in a longitudinal study with up to 29-year follow-up. *Personality and Individual Differences, 156*, 1-6.