

ORIGINAL RESEARCH

An Alternative to Regional Development and Sustainable Health Tourism: Traditional and Complementary Medicine Practices

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Abstract: The main purpose of this research is to evaluate the knowledge, attitudes and practices of the society towards traditional and complementary medicine practices of health tourism in line with the principles of regional development and sustainability, and to develop strategies for its development.

The family health center-based cross-sectional study design was employed. The universe of the study consisted of patients over the age of 18 and their relatives who received health services from two different family health centers. The data were collected from 390 people who agreed to participate in the study using face-to-face questionnaire technique. In the study, convenience sampling method was preferred. Descriptive statistics, independent sample t test, ANOVA test and structural equation modelling were applied. SPSS 26 and AMOS 24 package programs were used in the analysis of the data.

Path analysis revealed that the direct and indirect effects (positively mediated by attitude) of the level of knowledge towards traditional and complementary medicine on the use of traditional and complementary medicine had an acceptable index of fit.

A great majority of participants had sufficient knowledge, a favorable attitude and good usage levels about the use, benefit, effectiveness, difference from modern medical treatment, reliability and methods of traditional and complementary medicine practices. The increase in knowledge level toward traditional and complementary medicine causes an increase in both the attitude towards traditional and complementary medicine and the use of traditional and complementary medicine, and the level of knowledge has both direct and indirect effects on the use of traditional and complementary medicine.

The Ministry of Health should provide more information to healthcare professionals and the community so that traditional and complementary medicine practices are preferred and recommended. In addition, this study showed that more attention should be paid to their education and support in order to increase the knowledge, attitudes and uses of the society towards traditional and complementary medicine.

Keywords: Regional Development, Sustainable Health Tourism, Traditional and Complementary Medicine Practices

Introduction

Regional development depends on the existing natural resources of a region or region, the efficient use of resources, the positive change and development of its economic and socio-cultural structure and the increase in the level of welfare that will occur. Each region has different dynamics in terms of natural resources. Regions rich in non-exportable resources can use their resources effectively as a tourist attraction and turn them into tourism income. Thus, countries rich in natural resources can

earn income through many channels. One of these channels is the health tourism sector (Çeken, 2016).

Health tourism, which is a rapidly growing sector as a result of dynamics such as the globalization process in the world, problems in the country's health systems (such as long waiting times and rising costs, quality problems in services), and consumer awareness, has become a concept that includes both vacation and treatment elements. (Barca et al., 2013). Health tourism is an economic activity that requires trade between services and establishes a link between the medical and tourism sectors (Bookman & Bookman, 2007). The main idea in health tourism is to get away from the daily routine and to receive treatment in a comfortable and different environment or to benefit from supportive health services (SATURK, 2016).

It is known that travels for health tourism are made for many reasons. The main reasons that direct people to health tourism activities are; The lack or absence of high-tech health services and professional human resources in the country of the people, the desire to have a holiday with treatment, the cost of health services in their own country, the desire to get much better quality health service, not wanting to know the operation in their country for any reason (plastic surgery, infertility treatment, etc.), tourism mobility in the country where there is limited opportunity for holiday in terms of climate and geography (forests, highlands, going to countries with historical and cultural richness), the demand for holiday in a country where there are many thermal facilities and thermal tourism opportunities, chronic patients, elderly people and the desire of the disabled to go to other environments and to be treated, the desire of people with drugs and different addictions to be in different or more suitable environments, and the desire of the person to hold on to life and live (Ministry of Health, 2012).

Sustainability refers to the approach that envisages the use of resources to meet the needs of future generations and the balanced development of economic, socio-cultural and environmental factors. Particularly in the last fifty years, the extent of the destruction caused by industrialization made it necessary to take into account the sustainability factors in different areas. Sustainable health tourism; natural, social, economic etc. It can be defined as the provision of health services to consumers who travel from their place of residence in a planned manner for any reason by using resources in a balanced way. In line with the Tenth Development Plan for regional development, it was aimed to complete the infrastructure deficiencies regarding alternative tourism types, especially health tourism, to diversify the market, to support alternative tourism types and to develop health tourism (Ministry of Development, 2014).

Health tourism in the literature; Medical tourism is classified as elderly tourism, disabled tourism, thermal and spa tourism, and includes the newly added traditional and complementary medicine. Today, Far Eastern countries integrate well with traditional medical health tourism. For example, countries such as India, Malaysia, Singapore are trying to make health tourism more attractive by including traditional and complementary medicine products in their health tourism service packages. On the other hand, in general, researches on the knowledge, attitudes and practices of both health professionals and society on traditional and complementary medical treatments in our country are quite limited. In international studies, it has been observed that in parallel with the general population, the preferences of both health professionals and physicians towards traditional and complementary medicine treatments have increased over the years (Joos et al., 2011; Corbin and Shapiro, 2002).

In addition, many researchers aimed to determine how often traditional and complementary therapies are used to treat children. Most of these studies have focused on children with chronic illness or disability (Sinha and Efron, 2005; Friedman et al., 2005; Hagen et al., 2003; Hurvitz et al.,



2003; Sanders et al., 2003). Studies on adults are limited. With this research, against traditional and complementary medicine treatments as an alternative to regional development and sustainable health tourism; It is aimed to analyze the knowledge, attitudes and uses of the society and to determine the relationships between these behaviors. For this purpose, behaviors towards traditional and complementary medical treatments, which are an alternative to regional development and sustainable health tourism, were evaluated according to sustainability principles.

Understanding the community's level of knowledge, attitudes and levels of use towards traditional and complementary medicine treatments helps to predict the consequences of planned behavior. Thus, the main purpose of this research is to evaluate the knowledge, attitudes and practices of the society towards traditional and complementary medicine practices of health tourism in line with the principles of regional development and sustainability; to determine the structural relationship between level of knowledge, attitudes and levels of use towards traditional and complementary medicine treatments with structural equation modelling and to detect socio-demographic variables related to a satisfactory level of them and to explore awareness and health behaviours associated with the preferring traditional and complementary medicine treatments.

Literature Review and Hypothesis Development

In recent years, an increase has been observed in the use of "Traditional and Complementary Medicine Practices" and products both in the world and in our country (World Health Organization, 2013; Öztürk and Saylıgil, 2016). World Health Organization (WHO) traditional medicine; It is defined as a set of knowledge, skills and practices that can be explained or not, based on the theory, belief and experience specific to different cultures used in the prevention, diagnosis and treatment of physical diseases and mental illnesses as well as maintaining the well-being of health (World Health Organization, 2013).

Traditional and complementary medicine practices have their origins in ancient Chinese and Ayurvedic medicine. In ancient times, the use of herbal remedies was considered a part of medicine in societies where traditional healers and shamans served. The establishment of the National Center for Complementary and Alternative Medicine (NCCAM) affiliated to the National Institute of Health (NIH) in the United States in 1998 was a milestone, in order to first place complementary and alternative medicine practices on a scientific basis and to ensure the participation of these practices with proven reliability and effectiveness in modern treatments (Dokken and Sydnor-Greenberg, 2000).

Traditional and complementary medicine, which covers a wide range of treatments with herbal or animal products or some applications that vary from country to country or region to region, has been used for hundreds of years, especially by practitioners who provide health services at the social level. Although there is very limited evidence of the effectiveness of many traditional and complementary medicine practices, its use has been increasing in many countries, especially for health protection or against chronic diseases since the 1990s (World Health Organization, 2002).

The use of traditional and complementary medical treatment methods has increased steadily in many developing and industrialized countries in recent years. According to the World Health Organization (WHO) 2000 data, the frequency of use of traditional and complementary medicine treatments in developed countries; 42.1% in America; 48.2% in Australia; 49.3% in France; While it is 70.4% in Canada; developing countries, 71% in Chile; 70% in China; It has been reported to be 40% in Colombia and 80% in African countries. Herbal products are in the first place among these practices (World Health Organization, 2000; Robinson and Zhang, 2011). In addition to this, in studies conducted in recent years, Canada, Finland, Israel, England and the USA (Harris and Rees, 2000); In European countries (Härtel and Volger, 2004); In Australia (Xue et al., (2007); South Asia

(Amin et al., 2015); Turkey (Şimşek et al., 2017) and Andonesia (Pengpid and Peltzer, 2018) It has been demonstrated with statistical data that the use of complementary medicine treatments has become widespread. In some studies, it has been observed that the most preferred traditional and complementary medicine treatments are phytotherapy, chiropractic and music therapy (Cuellar et al., 2003), phytotherapy and cupping therapy (Sheikhrabori, 2017).

Knowledge and Practices toward Traditional and Complementary Medicine Practices

Increasing the need for care and chronic and malign diseases that are difficult to follow, physicians' inability to spare enough time for their patients, fear of the undesirable effects of drugs in conventional medicine have caused the interest of the society to focus on traditional and complementary medical treatments in the coming years. It is thought that this orientation will increasingly continue (Oral et al., 2016). In addition to all these stated usage reasons; It is stated that traditional and complementary medicine practices are preferred in cases where the demand for health services increases, dissatisfaction arising from existing health services, increasing health perception and the desire to be protected from diseases, modern medical treatments are inadequate and recovery is not possible or in order to increase the quality of life (World Health Organization, 2013).

H₁: There exists a significant relationship between knowledge and practices toward traditional and complementary medicine practices.

The Mediating Role of Attitude toward Traditional and Complementary Medicine Practices

The rate of using complementary and alternative therapies tends to increase all over the world. The use of these methods is increasing due to many reasons such as easier access to these treatments by the public, belief in the benefit of these methods, and dissatisfaction with existing health services (Zollman and Vickers, 1999). The World Health Organization has reported that two-thirds of the society in developed countries and 50-80% in developing countries use traditional and complementary treatment methods (World Health Organization, 2001).

In a study conducted with the aim of examining the factors affecting the use of traditional and complementary therapy in children and parents, it was stated that the reason why parents used traditional and complementary treatment methods was an indicator of their attitudes, beliefs and practices regarding these treatments (Davis et al., 2004). In another study, the main factors that direct parents to use traditional and complementary therapy are; dissatisfaction with medical health services, fear of the side effects of medical treatments, rejection of medicine and technology, distrust of the health institution and hopelessness (Ernst, 2000). In a similar study conducted in Italy, it was found that the majority of adults prefer these treatments because they expect lower toxicity than traditional and complementary therapies (Menniti-Ippolito et al., 2003).

H₂: Attitude mediates the relationship between knowledge and practices toward traditional and complementary medicine practices.

Material and Method

Ethics Approval (non-invasive)

Prior to conducting the study, we obtained informed consent from the participants. This research was carried out upon the approval of the ethics committee of Duzce University Scientific Research and Publication Ethics Committee (Date: 9.04.2021, Decision Number: 2021/114). Quantitative research methodology was used because it is suitable for the purpose and main problem of the research and the analysis of the data set was performed by using SPSS 26 and AMOS 24 statistical analysis programs.



Participants

Data collection was carried out from patients who received health care services from two different family health centers and agreed to participate in the study and their relatives. It is estimated that the total number of people receiving health services from the two different family health centers where the study was conducted between April 10, 2021 - May 15, 2021, is around 2,000. Within the scope of the research, 390 participants, who gave their consent, were informed about the objective, procedures, and confidentiality. The convenience sampling method was used to select the study participants.

Research Design and Procedure

The family health center-based cross-sectional study design was applied at two different family health centers. The study was designed and conducted by the researcher. The study period was from April 10, 2021 - May 15, 2021. The face to face invitations highlighted that participation was voluntary, participants could withdraw at any time, and all the information collected would be kept confidential. Face to face consent was received from all the participants before they completed the questionnaire.

Measurements of Variables

We applied the turkish version of the knowledge level scale about Traditional and Complementary Medicine (Wassie et al., 2015; Belachew et al., 2017), which features a Likert type scale made up of ten items [e.g., There is no harmful traditional and complementary medicine]. The instrument presented high reliability for the study sample ($\alpha=0.810$). And then, We applied the turkish version of the attitude scale about Traditional and Complementary Medicine (Belachew et al., 2017). The questionnaire had seven questions. These questions were answered on a Likert type scale made up of five items [e.g., Traditional and complementary medicine is more effective than modern medicine]. The instrument presented high reliability for the study sample ($\alpha=0.708$). After that, We applied the turkish version of the practice scale about Traditional and Complementary Medicine (Belachew et al., 2017; Bahall and Legall, 2017), which features a Likert type scale made up of six items [e.g., I prefer traditional and complementary medicine practices in cases where modern medical treatment is not available]. The instrument presented high reliability for the study sample ($\alpha=0.738$).

In the first stage, permission was requested from the researchers who developed the original scales for the adaptation process and their approval was obtained. The scales were translated into Turkish separately by 3 experts who know both the language of the original scale and Turkish very well. In the second stage, the translations made by the authors and the translation group consisting of experts were compared. While making the comparison, each item was examined in terms of whether the translations were appropriate in terms of intended meaning. The third stage is the provision of the previous stage. At this stage, the scales translated into Turkish were given to a group of 3-5 people who are experts in the language of the original scale and independent from the experts in the second stage and these experts were asked to translate the scales from Turkish back to the original language. Later, the original expression of each item was compared one-to-one with the expression resulting from this translation. With the translation in the third stage, it was seen that the original scale was appropriate.

The concept of language equivalence is also named as language validity in the literature. For this purpose, the original scale and the draft scale were applied to a group of at least 20 people who know the languages of both scales well. In the application process, first the original scale and then the Turkish scale were applied at two-week intervals. After the application, the total scores of each



individual in the study group obtained from both the original scale and the Turkish scale were calculated, and it was observed that the Pearson correlation coefficient of the relationship between the two applications was significant ($p < 0.01$) and the degree of coefficient was 0.88 which shows a very high degree of harmony.

Data Analysis

All statistical analyses were performed using IBM SPSS 26 version and AMOS 24 version. Cronbach alpha statistics were calculated for the overall scale and the three subscales to assess reliability in terms of internal consistency. First, the reliability analysis was performed on the data, and then the main variables of the research (knowledge level, attitude and practices about traditional and complementary medicine) were examined in terms of means, standard deviations, reliability coefficients, frequency distribution and variance values. Second, confirmatory factor analyses (CFA), using structural equation modelling in AMOS 24, were performed to assess different latent structure models of the relationship between knowledge level, attitude and practices about traditional and complementary medicine. Third, path analysis technique was performed to test the mediating effect of attitude about traditional and complementary medicine. Maximum likelihood was the model estimation method used. Models examined were based on the results from previous research about factor structures of the relationship between knowledge level, attitude and practices about traditional and complementary medicine among individuals. Criteria for determining confirmatory factor analysis model fit and measurement invariance were based on conventional standards (Munro, 2005, Brown, 2006; Byrne, 2001). Specifically, adequate model fit for a confirmatory factor analysis model was defined by a chisquare/df value < 5 , Root Mean Square Error of Approximation (RMSEA) value ≤ 0.10 , Comparative Fit Index (CFI) ≥ 0.90 , Tucker Lewis index (TLI) values ≥ 0.90 , Incremental Fit Index (IFI) values ≥ 0.90 and Goodness of Fit Index (GFI) values ≥ 0.85 .

Results

Demographic Characteristics of Study Participants

Three hundred ninety (390) participants in this survey. It can be seen that 44.9% males and 55.1% females were the respondents for this study. Among 390 respondents, 0.3% were aged 20–29 years, 3.8% were aged 30-39 years, 7.7% were aged 40-49, 72.1% were aged 50-59 and the remaining 16.2% were aged >59 years. Participants about two-thirds (76.9%) graduated from a university and most respondents were married (71.8%). Most respondents were officer (653.3%). Other occupations such as unemployed, private sector employee, housewife, employee, retired, self-employment accounted for 14.1%, 13.1%, 8.2%, 5.1%, 3.8% and 2.3% respectively.

Descriptive Findings Related To Factors

Number of participants, means, standard deviations, variance and cronbach's alpha values are given in Table 1.

Table 1. Descriptive statistics related to factors

Factors	N	Mean	Standard Deviation	Variance	Cronbach's alpha
Knowledge level about traditional and complementary medicine	390	3.9582	.58803	.346	.810
Attitude about traditional and complementary medicine	390	3.8267	.61321	.376	.708
Practice about traditional and complementary medicine	390	4.0744	.76742	.589	.738

As a result of the confirmatory factor analysis, the overall reliability coefficient was found to be $\alpha = 0.868$. Because $0.80 \leq \alpha < 1.00$, the scale is highly reliable. Ensuring validity and reliability shows the existence of a structural relationship between knowledge level, attitude and practices about traditional and complementary medicine among individuals.

The Model Fit Measures

To have a good fit model and to present a structural relationship, it is necessary to measure the relationship between the latent variables and their items. Then the structural relationship can be performed to explore the relationship between latent variables. A total of 21 questions in this study constitute three latent variables. From the 21 questions, 2 item was removed because of poor communality extraction; finally, a total of 19 items/questions are taken into consideration to proceed further. The model fit was tested by different model fit indicators, which is given in Table 2.

Table 2. Model fit measures

Measure	Estimate	Threshold	Interpretation
CMIN/DF	2.560	Between 1 and 5	Acceptable range
CFI	0.927	≥ 0.90	Within range
GFI	0.914	≥ 0.85	Within range
TLI	0.912	≥ 0.90	Within range
RMSEA	0.063	≤ 0.10	Within range
IFI	0.928	≥ 0.90	Within range
RMR	0.047	≤ 0.08	Within range

From Table 2, it can be summarized that this study questions/items of the latent variables pass through all the major model fit indicators suggested by Munro (2005), Brown (2006) and Byrne (2001).

The Results of the Measurement Model

It was assumed that the reasoning between the variables in the research model can be explained. Confirmatory factor analysis was performed to test the validity of the scales used, and the structure of all scales were verified. Figure 1 shows the confirmatory factor analysis results and model fit for the variables of knowledge level, attitude and practices about traditional and complementary medicine.

The results for measuring the reliability and validity of the measurement model are illustrated in table 3. Table 3 provides various measures of the measurement model. The estimates or standard loading of each item ranges from 0.26 to 0.91. Again, Cronbach's α is a reliability measurement criterion which is ranging from 0 to 1, and 0.60 is the lower boundary prescribed by Hair et al. (2019). From the following table, it is seen that all three values of Cronbach's α is well above the minimum criteria (>0.70). Finally, for average variance extracted (AVE) and construct reliability (CR), Fornell and Larcker (1981) stated that although the AVE value is below 0.50, if the CR value is above 0.70, AVE values below 0.50 can be accepted. Table 3 represents that the reliability and validity of the constructs applied in this study met the criteria.

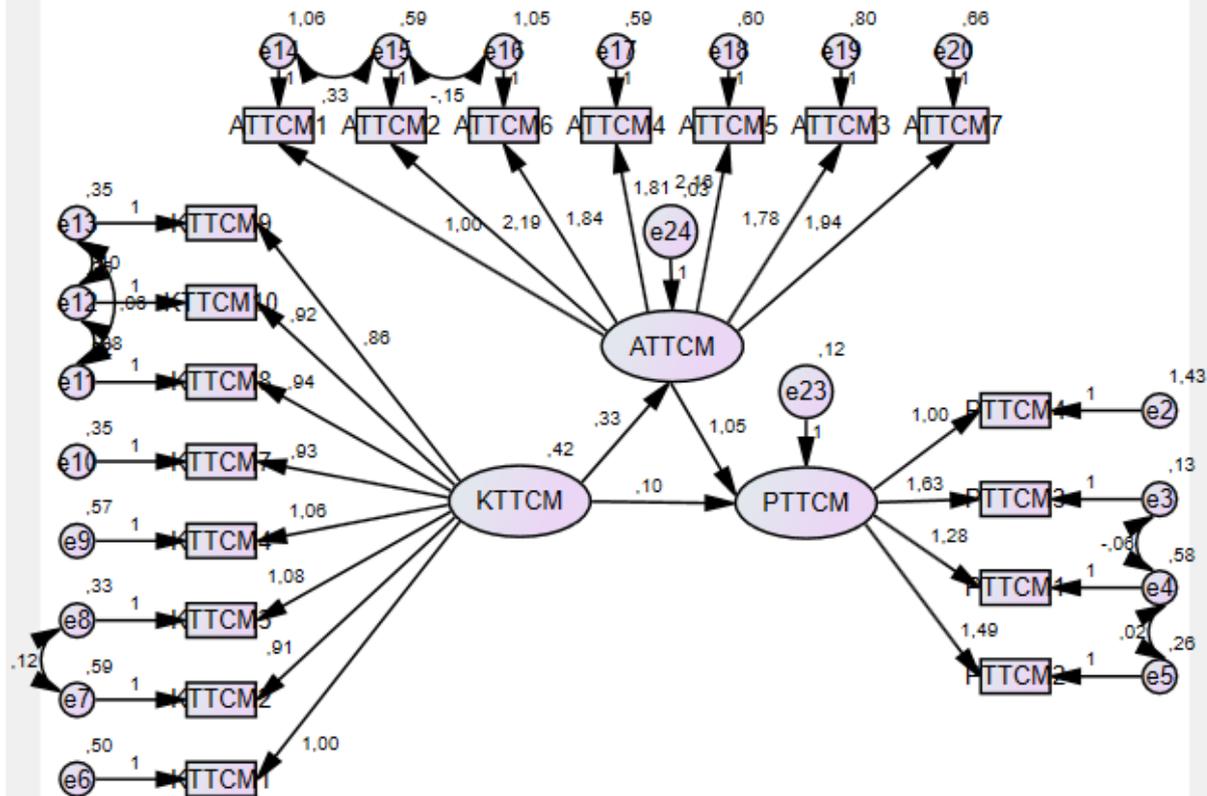


Figure 1. The results of the full model

Table 3. The items’ estimate and the constructs’ Cronbach’s α , AVEs and CRs.

Constructs	Items	Estimate	Cronbach’s α	Average Variance Extracted (AVE)	Construct Reliability (CR)
Practices toward Traditional and Complementary Medicine (PTTCM)	PTTCM4	.380	.738	0.52	0.85
	PTTCM3	.913			
	PTTCM1	.639			
	PTTCM2	.821			
Knowledge toward Traditional and Complementary Medicine (KTTTCM)	KTTTCM1	.676	.810	0.50	0.90
	KTTTCM2	.609			
	KTTTCM3	.770			
	KTTTCM4	.674			
	KTTTCM7	.712			
	KTTTCM8	.732			
	KTTTCM10	.768			
Attitude toward Traditional and Complementary Medicine (ATTTCM)	ATTTCM1	.262	.708	0.29	0.75
	ATTTCM2	.624			
	ATTTCM6	.450			
	ATTTCM4	.551			
	ATTTCM5	.616			
	ATTTCM3	.487			
	ATTTCM7	.556			

Since the CR values are greater than 0.7, the factors have high construct reliability. The fit values examined show that the data fit the model well. Table 4 shows the results of the structural model.

Table 4. The result of the structural model

Hypothesis	Paths	Estimate	P	Result
<i>Effect of Knowledge toward Traditional and Complementary Medicine on Practice toward Traditional and Complementary Medicine (Before Mediation)</i>				
H ₁	PTTCM <--- KTTTCM	.593	***	H ₁ supported
<i>Effect of Knowledge toward Traditional and Complementary Medicine on Practice toward Traditional and Complementary Medicine (After Mediation)</i>				
H ₂	ATTTCM <--- KTTTCM	0.772	***	H ₂ supported with a partial mediation
	PTTCM <--- ATTTCM	0.598	***	
	PTTCM <--- KTTTCM	0.131	***	

The indirect relationship and its properties are shown in Table 5. When the mediator variable (ATTTCM) is included in the model with the independent variable (KTTTCM) are included in the model, the direct effect of the independent variable (KTTTCM) on the dependent variable (PTTCM) is reduced. The standardized regression value between the independent variable (KTTTCM) and the dependent variable (PTTCM) decreased from 0.593 to 0.462.

Table 5. Indirect effect of the model

Indirect Path	Unstandardized Estimate	Standardized Estimate	p value
KTTTCM --> ATTTCM --> PTTCM	0,353	0,462	***

The Results of the Structural Model

From the result, it is found that with a direct effect of ‘knowledge toward traditional and complementary medicine’, there is a significant impact established on practice toward traditional and complementary medicine. Thus, H₁ is statistically supported. On the other hand, with the presence of a mediator, attitude toward traditional and complementary medicine, it can be seen that the relationship between ‘knowledge toward traditional and complementary medicine’ and ‘practice toward traditional and complementary medicine’ becomes less significant and creates a partial mediation effect into the relationship.

After performing a bootstrap of 2,500 samples with 95% bias-corrected confidence intervals it is found that with the presence of mediator (attitude toward traditional and complementary medicine), the direct relationship between ‘knowledge toward traditional and complementary medicine’ and ‘practice toward traditional and complementary medicine’ becomes less significant and creates a partial mediation relationship. The structural model illustrated in Figure 1.

Discussion and Conclusion

In this study was tried to assess the knowledge, attitudes and practices of the society towards traditional and complementary medicine practices in line with the principles of regional development and sustainability of health tourism, and to develop strategies for its development. In this study, the socio-demographic, knowledge, attitude and practices toward traditional and complementary medicine practices of 390 participants were analyzed. This is the first study that examined especially knowledge level, attitudes and practices of the society about traditional and complementary medicine treatment in line with the principles of regional development and sustainability of health tourism in Duzce sample using a medium-scale cross-sectional design.

Overall, society have sufficient knowledge, optimistic attitude and good practice level toward traditional and complementary medicine treatments. In this study, a great majority of the participants had good and sufficient knowledge of clinical practices of the traditional and complementary medicine treatments which is similar to recent studies (Wassie et al., 2015; Belache

et al., 2017). Furthermore, a great majority of the participants had optimistic attitude and good practice level of clinical practices of the traditional and complementary medicine treatments. In a similar study, The population in Merawi Town, Northwest Ethiopia has good knowledge with high acceptability and use of traditional medicine (Wassie et al., 2015). Also overall, most of the participants were found to exhibit good knowledge and favourable attitudes towards traditional and complementary medicine treatments along with good practices (El-Olemy et al., 2017).

But in another study, significant number has a good knowledge but generally the attitude toward complementary and alternative medicine is relatively low (Belachew et al., 2017). In a study on nurses, although nurses have a positive attitude towards traditional and complementary medicine, their level of knowledge was found to be low (Zeighami and Soltani-Nejad, 2020).

Moreover, it is found that with a direct effect of ‘knowledge toward traditional and complementary medicine’, there is a significant impact established on practice toward traditional and complementary medicine. On the other hand, it is found that with the presence of mediator (attitude toward traditional and complementary medicine), the direct relationship between ‘knowledge toward traditional and complementary medicine’ and ‘practice toward traditional and complementary medicine’ becomes less significant and creates a partial mediation relationship.

It is recommended to increase the market share of our country in the world by activating the basic driving factors and by providing traditional and complementary medicine practices, which are an alternative to regional development and sustainable health tourism, together with healthy life support programs.

At the same time, it is recommended to increase the competitiveness of our country in the health tourism sector with the cooperation of all areas covered by the health sector and traditional and complementary medical tourism.

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