

## Article

# Do Consumers Consider the Healthfulness of Wine in Republic of Korea?

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**Abstract:** Purpose: Wine is an alcoholic beverage considered to have health benefits when consumed in moderation. Studies have investigated the healthfulness of wine via various approaches; however, given that wine consumption behavior is evolving, fresh data are needed. There is a paucity of evidence on the perceived mental health benefits of wine; hence, this study examined consumers' perceptions of wine healthfulness separately for each physical and mental health benefit and compared them with wine consumption behaviors. Design/methodology/approach: A quantitative data collection method was used. The questionnaires were given to participants in South Korea who had consumed wine in the six months before the survey. A total of 304 responses were collected for further analysis. A paired *t*-test, ANOVA, and descriptive analysis were used to analyze the data. Findings: This study found that respondents perceived higher mental health benefits than physical health benefits from wine consumption. Demographic characteristics showed significant differences in the mental or physical health benefits of wine. Consumers who believed in the physical health benefits of wine preferred white wine over red wine; however, consumers who believed in the mental health benefits of wine had no preferences. Originality: This study suggests that segmented marketing tools are needed due to the various characteristics of wine consumers. In addition, to encourage a healthy drinking environment, marketing should focus on moderation for both the wine industry and consumers. Furthermore, consumers' consideration of the mental health benefits of wine consumption cannot be underestimated compared to the physical health benefits of wine consumption; however, wine is also regarded as an alcoholic beverage that needs to be consumed with consideration of health concerns in various restrictions.

**Keywords:** wine; health; consumers; consumption; behaviors

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## 1. Introduction

The healthfulness of food and beverages plays a critical role in our daily diet. Among various beverages, wine has been a part of human dietary culture and is often consumed with meals [1]. The term 'French paradox' explains the relatively low mortality rate from coronary heart disease demonstrated in the French population, although they have diets high in saturated fat [2]. Many studies have since investigated the health benefits of wine consumption from various angles, including science and art. However, findings indicate positive and negative sides to wine consumption, given wine is an alcoholic beverage [3,4]. Moderate wine drinking is related to good self-rated health [5]. An understanding of the scientific benefits of and emotional responses to wine consumption can vary by consumer. The concept of enotherapy treatment refers to a practice dating to when the ancient Egyptians believed wine could treat diseases, enhance health [6], and have hedonic and social value. However, recent studies show that health belief plays an important role in hedonistic and social beliefs [7].

The consumption of food and beverages is affected by two processes: the identification of a product and the associations of specific food and beverages [8]. For instance, consumers' responses to food or beverage experiences are associated with not only the product itself but also functional (e.g., healthfulness) and emotional implications (e.g., happiness) [9]. In addition, a previous study [10] suggested that how consumers perceive the healthiness of wine is essential to wine choice. Wine consumption behaviors differ from food culture, which leads to the unique characteristics of wine consumption [3,7,11–13]. Investigating the demographic characteristics of wine consumers is essential considering wine is a lifestyle beverage [14]. Western countries are familiar with wine, while Asia has a shorter history with an emerging market for consumption and production [15]. Korea is a new market for wine, and wine consumers are interested in health-related benefits when shopping [13]. Hence, this study's purpose is three-fold: (a) to explore consumers' perception of the physical and mental health benefits of wine (emotions), (b) to examine the characteristics of wine consumption behaviors, and (c) to investigate the characteristics Korean consumers have regarding health benefits when purchasing wine. Since there are not much data on the perceived mental health benefits of wine, this study will offer academia and the wine industry a deeper understanding of consumer behaviors associated with wine purchases.

## 2. Literature Review

### 2.1. Wine and Health Benefits

Wine has been the subject of many studies related to health benefits and human intervention [16–21]. The health benefits of wine mainly result from the content of red wine, which helps the cardiovascular system and may enhance lifespan. Resveratrol, which can be found in the skin and tannins of red grapes, is related to cardiovascular function [19,20], memory loss, and life span [16,22]. Resveratrol is a phenolic compound with anti-cancer properties [21] that helps to reduce the risk of prostate cancer [17]. Red wine contains antioxidant 'flavonoids' which also help decrease the risk of coronary heart disease and heart attack by 30–50% [23]. A study reviewing the association between the health benefits of wine consumption and the Mediterranean diet showed that moderate wine consumption can be beneficial for non-communicable diseases such as hypertension, cancer dyslipidemia, and dementia [24]. In addition, red wine prevents neurodegenerative diseases [25] and metabolic disturbances [26] and dissimulates an immune response against inflammations [27]. Red wine is generally assumed to be healthier than white wine [28,29]. For example, red wine has eight times as many flavonoids as white wine [23], but white wine also has cardio-protective [30] and other metabolic benefits [31]. However, the health benefits of wine cannot be generalized since the conditions of wine production and consumption vary.

A healthy diet is the foundation for physical and mental health [32]. Consumers drink wine not only for certain physical health benefits but for psychological and hedonic motives [1,33–37]. For instance, consumers drink wine for relaxation, celebration, esthetic, or social reasons [34,35]. According to Charters and Pettigrew (2005) [38], food and drink offer an esthetic experience, including sensory, cognitive, and/or emotional responses. Wine especially provides feelings of relaxation and calmness, which are related to pleasant low-arousal emotions [37].

Although wine consumers believe that wine is healthier than other alcoholic beverages, and that red wine is the healthiest wine type [28], Vecchio (2017) [12] found that consumers differentiate between red wine and white wine in terms of healthiness. Consumers' wine purchase behaviors are not only dependent on the health benefits of wine. A review by Deroover et al. (2021) [29] found that the healthiness of wine can be controversial in decision making. In their review, Deroover et al. (2021) [29] suggest that the healthfulness of wine can be significant or insignificant in shaping attitudes, intentions, or behaviors associated with wine consumption. The selection of wine was based on taste, sociability, or food matching. A positive relationship between price and perceived healthiness for red wine was found, while a negative relationship existed between price and perceived healthiness

for white wine [10]. A study claimed that healthiness might be a predictor of premium wine choices since consumers were willing to pay more to purchase healthier wine [39]. The health affordance of wine was one important factor when selecting a premium wine in the Spanish market [39].

## 2.2. Wine and Consumer Characteristics

Despite the long history of alcoholic beverages, wine is little known in countries in Asia compared to Western countries, where the term ‘wine and dine’ indicates entertaining someone with food and drink [40]. Dietary behaviors vary by individual, social and cultural norms, and nationality. Generally, the consumption of alcoholic beverages is regarded as a part of traditional Chinese culture [41]. Drinking behaviors in China often involve binge drinking with colleagues to develop social relationships [42]. Similarly, drinking alcoholic beverages is a part of agricultural society in Korea, such as drinking makgeolli with co-workers during snack time between meals in a farm field and presenting and drinking cheongju during ritual ceremonies. In 1987, when the Korean government liberalized wine imports, wine was primarily introduced to hotels and restaurants [43]. As a result of cultural differences in wine consumption, consumer behaviors have evolved. For instance, in a study comparing wine consumption characteristics between Australians and Koreans, Koreans were more accepting than Australians of statements suggesting that wine can reduce the risk of certain diseases [13]. It has been known that preferences for red wine are related to consumers’ perceived healthiness [10,12,44], but this differed by nationality. For instance, Chinese individuals typically prefer red wine for its health benefits [44], while Australians do not believe in the health benefits of wine [10]. Additionally, Vecchio (2017) [12] found that French, Italian, and Spanish consumers have a positive perception of wine’s health benefits and believe that drinking wine is healthier than drinking other types of alcoholic beverages.

In general, wine purchase behaviors differ by consumers’ socio-demographic characteristics [45]. The positivity of red wine’s healthiness is independent of the demographic characteristics of consumers [28]. In wine selection, consumers consider previous experience, personal recommendations, and taste, while their preferences differ by demographic characteristics [46]. Experience can be an important factor in wine purchase decisions; for example, on the day of a wine tasting in one study, sales went up by 400 percent [47]. Previously, it was found that Koreans drink wine approximately once a month, compared to a few times a week for Australians, and mostly purchase wine at supermarkets [13]. The majority of Korean consumers purchase wine as a gift one to three times per year [13], suggesting wine is a generally acceptable welcoming gift. Chinese consumers choose higher-priced wine when they purchase for a gift [44].

Age was a predictor of the belief in health benefits [10,44]. Older males with a lower income perceived wine as healthy [10], while younger individuals drank wine for pleasure [45]. Regarding gender differences in wine selection, Meurk et al. (2014) [36] found that women are more likely to consider wine a feminine, healthy alcoholic beverage, while in other research wine was considered more masculine [44]. Consumers stress previous experience/personal recommendations when purchasing wine [45], and women tend to obtain wine information from store or restaurant staff [48].

Many studies have researched the healthfulness of wine to determine whether healthfulness persists and best represents physical health. In other words, the behaviors of wine consumers have seldom ever taken mental health and wine purchases into account. Hence, this study focuses on the differentiation of physical and mental health in relation to demographic variables when making wine purchasing decisions.

## 3. Materials and Methods

### 3.1. Participants and Data Collection

The survey was carried out with adults in South Korea. The questionnaire was designed to investigate the perceived health benefits of wine, and participants were therefore chosen based on their interest in wine consumption. The study was approved by the Insti-

tutional Review Board of Woosong University (1041549-200107-SB-84). Wine club members who had consumed wine within the previous six months were given the questionnaire. The survey was conducted for two weeks and was self-administered online. A total of 520 participants were conveniently chosen with their consent. A total of 304 responses were entered for further analysis, representing a response rate of 58.5 percent.

### 3.2. Questionnaire Design

This study used a quantitative method to gather data. The questionnaire was designed and constructed based on previous studies [1,21,34,37,38]. The questions used in the questionnaire were screened by experts to assure they captured the projected meaning without any misinterpretations. A total of nine questions were included related to the health benefits of wine consumption. In addition, six questions about demographics and nine questions about wine purchasing behaviors were asked. The questions were asked on 5-point Likert scales from 'strongly disagree' (1) to 'strongly agree' (5). The questionnaires inquired about nine wine purchase behaviors and demographic information.

### 3.3. Statistical Analysis

Collected data were coded into Excel, and SPSS 27.0 (IBM SPSS, 2022) was then used to analyze the data. Descriptive analysis was conducted on both the demographic and wine purchase behavior characteristics. Chi-square tests were used to analyze any significance in demographic characteristics regarding wine consumption behaviors. Cronbach's alpha was determined to evaluate the internal consistency of the physical and mental health benefits of wine. In addition, a paired *t*-test was used to compare the physical and mental health benefits of wine. Analysis of variance (ANOVA) was conducted to investigate any significant differences between the health benefits of wine and consumers' wine consumption behaviors and demographic characteristics. Games–Howell tests were used for analysis of demographic characteristics and health benefits against each variable.

## 4. Results

### 4.1. Respondents' Demographic Profiles

There were slightly more male (52.3%) than female (47.7%) respondents. The majority of the respondents were married (69.4%), while singles accounted for 28.9% of the sample. Most of the respondents were in college or had a bachelor's degree (63.8%). Most were in their 40s (48.7%), followed by 30s (31.9%), 50s (10.9%), 20s (4.9%), and 60 and over (3.6%). Respondents who had a monthly income of between KRW 2,000,000 and KRW 4,000,000 accounted for approximately 35.9% of the sample, followed by those with an income between KRW 4,000,000 and KRW 6,000,000 (28.9%), KRW 6,000,000 and over (22.4%), and below KRW 2,000,000 (12.8%).

### 4.2. Demographic Characteristics and Wine Purchasing Behaviors

Table 1 shows the demographic characteristics of consumers' wine purchasing behaviors. Most of the respondents purchased wine at a supermarket. The respondents' most preferred pricing for a bottle of wine was between KRW 20,000 and KRW 29,999. The majority of the respondents consumed wine in their homes and some drank wine at restaurants. Most of the respondents drank wine either once per month or less and the average amount of wine consumed per event was two to three glasses. Wine was mostly consumed with family, followed by with friends, alone, with social club members, with colleagues, and with others.

The majority of the respondents preferred red wine, followed by sparkling, white, rosé, and others. Wine produced by France was preferred by respondents, followed by wine produced by Chile, America, Italy, Spain, Australia, Korea, New Zealand, and Germany. Preference of production country was almost equal between the old and new world. Information was sourced from the Internet and family and friends. Results show that respondents mostly depended on a salesperson's recommendation.

**Table 1.** Respondents' characteristics of wine purchasing behavior.

		Frequency	Valid (%)
Place of wine purchase	Supermarket	177	58.2
	Department store	32	10.5
	Wine shop	72	23.7
	Restaurants	1	0.3
	Others	22	7.2
Preferred price for a bottle of wine	Less than KRW 20,000 *	63	20.7
	≥KRW 20,000 and <KRW 30,000	81	26.6
	≥KRW 30,000 and <KRW 50,000	77	25.3
	≥KRW 50,000 and <KRW 70,000	46	15.1
	≥KRW 70,000 and <KRW 100,000	26	8.6
	≥KRW 100,000	11	3.6
Place for wine consumption	Hotel	4	1.3
	Restaurant	46	15.1
	Wine bar	28	9.2
	Home	213	70.1
	Others	13	4.3
Monthly wine consumption frequency	One time or less	119	39.1
	Two to four times	104	34.2
	Five to eight times	51	16.8
	9 times or more	28	9.2
	Every day	2	0.7
Average quantity for wine consumption	120 mL or less (about 1 glass)	64	21.1
	121–360 mL (about 2–3 glasses)	133	43.8
	361–750 mL (about 4–6 glasses)	94	30.9
	Over 750 mL (about more than one bottle)	13	4.3
Companion to wine consumption	Alone	42	13.8
	Family	133	43.8
	Friends	77	25.3
	Colleagues	14	4.6
	Social club members	34	11.2
	Others	4	1.3
Wine preference	Red	204	67.1
	White	42	13.8
	Rosé	5	1.6
	Sparkling	49	16.1
	Others	4	1.3
Wine produce country	France	124	40.8
	Italy	30	9.9
	Germany	2	0.7
	Spain	20	6.6
	Chile	66	21.7
	America	30	9.9
	Australia	11	3.6
	New Zealand	3	1.0
	Korea	5	1.6
Others	13	4.3	
Information source	Family and friends	100	32.9
	Previous experience	18	5.9
	Experts' or salespersons' recommendation	42	13.8
	Newspapers and magazines	6	2.0
	Internet	118	38.8
	Exhibitions	5	1.6
	Others	15	4.9
Total		304	100

\* USD 1 was equivalent to approximately KRW 1159 as of 20 January 2022.

We used a chi-square test to investigate noticeable differences among wine purchasing behaviors according to demographic characteristics (Table 2). Gender differences were found in terms of wine consumption ( $X^2 = 10.173$ ,  $p < 0.05$ ), frequency of monthly wine consumption ( $X^2 = 14.368$ ,  $p < 0.001$ ), average quantity of wine consumed ( $X^2 = 26.103$ ,  $p < 0.001$ ), and wine preference ( $X^2 = 21.472$ ,  $p < 0.001$ ). The preferred place for wine consumption was similar in males and females, except for wine bars, which males preferred

more than females. Males generally consume wine two to four times monthly, while females consume wine one time a month or less. The average quantity of wine consumed indicates that males and females drink about two to three glasses of wine per event. Males prefer red wine and females prefer sparkling wine.

**Table 2.** Characteristics of wine consumption behaviors by demographic profiles.

	Gender	Age	Marital Status	Education	Monthly Income
Wine consumption behavior			$\chi^2$		
Place of wine purchase				17.202 *	23.743 *
Preferred price for a bottle of wine			23.831 **		29.380 *
Place for wine consumption	10.173 *				
Monthly wine consumption frequency	16.576 **				50.764 ***
Average quantity for wine consumption	25.690 ***			28.025 ***	29.201 **
Companion to wine consumption		53.068 ***	99.241 ***		30.835 **
Wine preference	21.472 ***				3.263 *
Wine produce country		57.199 *	54.228 ***		55.186 **
Information source					

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Age differences characterized wine consumption ( $X^2 = 53.068$ ,  $p < 0.001$ ) and the average quantity of wine consumed ( $X^2 = 2.940$ ,  $p < 0.05$ ). The results show that those aged less than 40 years old often consumed wine with friends, while those over the age of 40 had wine with their family. In addition, those in their 30s preferred wine produced in France and Chile, while those in their 40s preferred American wine.

Marital status had significant differences in terms of price ( $X^2 = 23.831$ ,  $p < 0.01$ ), companions during wine consumption ( $X^2 = 99.241$ ,  $p < 0.01$ ), and wine country of origin ( $X^2 = 54.228$ ,  $p < 0.001$ ). Married individuals seemed to like wine priced at less than KRW 20,000, while single individuals preferred wine between KRW 30,000 and KRW 49,999. Single individuals liked to drink wine with their friends, while married people indicated they liked to drink wine with their family. Both groups preferred French wine, although some married people preferred American wine and some single individuals did not have a preference. Education was associated with significant differences in where wine was purchased ( $X^2 = 17.202$ ,  $p < 0.05$ ) and the average quantity of wine consumed ( $X^2 = 28.025$ ,  $p < 0.001$ ). All respondents preferred purchasing wine at a supermarket. Those with a higher than high school level of education had a greater preference for wine shops compared to respondents with a high school education or lower. Those with a higher educational level drank more on average than those with less formal education.

Monthly income significantly altered place of wine purchase ( $X^2 = 23.743$ ,  $p < 0.05$ ), preferred price for a bottle of wine ( $X^2 = 29.380$ ,  $p < 0.05$ ), monthly wine consumption frequency ( $X^2 = 50.764$ ,  $p < 0.001$ ), average quantity of wine consumed ( $p < 29.201$ ,  $p < 0.01$ ), companions for wine consumption ( $X^2 = 30.835$ ,  $p < 0.01$ ), and wine preference ( $X^2 = 3.263$ ,  $p < 0.05$ ). Most of the respondents preferred purchasing wine in a supermarket; however, those with higher monthly incomes tended to purchase wine at a restaurant compared to those with a monthly income of less than KRW 2,000,000. A similar pattern appeared in the preferred price for a bottle of wine. Those with a higher monthly income preferred a higher-priced bottle of wine compared to those with a lower monthly income.

The frequency of wine consumption showed a similar pattern as well. Respondents with a higher income drank wine more frequently compared to those with a lower income. The average amount of wine drunk had a similar pattern as well. Companions during wine consumption showed significant differences with a similar pattern. For example, most of the respondents drank wine with family and friends, while those with a monthly income between KRW 2,000,000 and KRW 4,000,000 drank alone. There were some differences in



wine preference. Most of the respondents preferred wine produced in France. However, consumers with the highest income preferred American wine and those with an income lower than KRW 6,000,000 preferred wine from Chile.

4.3. Physical vs. Mental Health Benefits of Wine

Three questions related to the mental benefits (Cronbach’s alpha = 0.844) of wine consumption and six questions related to its physical health benefits (Cronbach’s alpha = 0.883) were measured for reliability, which was satisfactory (Table 3). A paired *t*-test was used to investigate the significance of the physical and mental health benefits of wine. The results show that mental benefits (M = 3.759, SD = 0.662, *p* < 0.001) were considered more important than physical health benefits (M = 3.247, SD = 0.707) when consuming wine. Each health benefit was compared to demographic characteristics (Table 4). One-way ANOVA was conducted to compare demographic characteristics concerning the health benefits of wine. Both physical and mental health benefits did not significantly differ by demographic characteristics, except that respondents with different monthly incomes perceived physical health benefits differently (F = 2.640, df = 3, *p* = 0.05), with marginal significance. The results of post hoc analysis show that those with a monthly income between KRW 2,000,000 and KRW 3,999,999 (M = 3.379, SD = 0.707) considered the physical health benefits of wine to be more important than those with an income of KRW 6,000,000 and greater (M = 3.105, SD = 0.643).

Table 3. Results of the reliability of the perceived health benefits of wine.

Health Benefits	Measurement	Mean ± SD	Cronbach’s Alpha
Physical health	Wine helps prevent cardiovascular disease	3.68 ± 0.739	0.883
	Wine helps fight cancer	3.39 ± 0.879	
	Wine helps prevent lifestyle diseases	3.42 ± 0.833	
	Wine helps with dieting	2.79 ± 0.972	
	Wine helps skincare	3.11 ± 0.977	
	Wine helps relieve constipation	3.09 ± 0.920	
Mental health	Wine helps with relaxation (releases stress)	3.86 ± 0.680	0.844
	Wine helps reduce depression	3.70 ± 0.787	
	Wine helps calm the mind	3.72 ± 0.804	

Table 4. Results of a paired *t*-test of the physical and mental health benefits of wine.

Physical Health	Mental Health	<i>t</i> -Value	<i>p</i> -Value
Mean ± SD			
3.247 ± 0.707	3.759 ± 0.662	−13.559	0.000

Each mental and physical health benefit was then compared against wine purchasing behaviors. For mental health benefits, the price of wine (F = 2.870, df = 5, *p* < 0.05), monthly wine consumption frequency (F = 4.278, df = 4, *p* < 0.01), and average quantity of wine consumed per event (F = 3.038, df = 3, *p* < 0.05) were significantly different (Table 5). Respondents who preferred wine priced between KRW 30,000 and KRW 49,999 (M = 3.878, SD = 0.584) considered mental health benefits more so than respondents who preferred wine priced less than KRW 20,000 (M = 3.523, SD = 0.554). Those who consumed wine five to eight times a month (M = 4.032, SD = 0.670) thought more highly of the mental health benefits of wine than those who consumed it once a month or less (M = 3.62, SD = 0.590) and nine times or more a month (M = 3.607, SD = 0.907). In addition, the quantity of wine consumed showed similar results to frequency. Respondents who consumed approximately two to three glasses at a time considered it good for their mental health compared to respondents who consumed one glass per event. The results show that those who believe in mental health benefits consume wine in moderation.

**Table 5.** Effect of the mental health benefits of wine when purchasing wine.

Mental Health Benefits		Mean ± SD	F	p
Price	Less than KRW 20,000 *	3.523 ± 0.554 <sup>a</sup>	2.870	0.015
	≥KRW 20,000 and <KRW 30,000	3.744 ± 0.721		
	≥KRW 30,000 and <KRW 50,000	3.878 ± 0.584 <sup>b</sup>		
	≥KRW 50,000 and <KRW 70,000	3.876 ± 0.675		
	≥KRW 70,000 and <KRW 100,000	3.897 ± 0.697		
Monthly wine consumption frequency	≥KRW 100,000	3.575 ± 0.870	4.278	0.002
	One time or less	3.621 ± 0.590 <sup>a</sup>		
	Two to four times	3.826 ± 0.621		
	Five to eight times	4.032 ± 0.670 <sup>b</sup>		
Average quantity of wine consumed per event	9 times and over	3.607 ± 0.907 <sup>ac</sup>	3.038	0.029
	Every day	3.666 ± 0.471		
	120 mL or less (about 1 glass)	3.614 ± 0.645 <sup>a</sup>		
	121–360 mL (about 2–3 glasses)	3.884 ± 0.600 <sup>b</sup>		
	361–750 mL (about 4–6 glasses)	3.691 ± 0.703		
	Over 750 mL (about more than one bottle)	3.692 ± 0.876		

\* USD 1 was approximately KRW 1159 as of 20 January 2022. Means and standard deviations for the different purchasing behaviors by questions with different superscript letters are significantly different at a  $p < 0.05$  based on Games–Howell tests.

Table 6 displays the effect of purchasing wine on physical health benefits while purchasing wine. For physical health benefits, significant differences were found in monthly wine consumption frequency ( $F = 3.743$ ,  $df = 4$ ,  $p < 0.01$ ), average quantity of wine consumed per event ( $F = 6.815$ ,  $df = 3$ ,  $p < 0.001$ ), wine preference ( $F = 2.624$ ,  $df = 4$ ,  $p < 0.05$ ), and information source ( $F = 2.513$ ,  $df = 6$ ,  $p < 0.05$ ). Respondents who drank wine nine times or more a month were less concerned with the physical health benefits of wine than those who had it once a month or less ( $M = 3.320$ ,  $SD = 0.586$ ), two to four times a month ( $M = 3.304$ ,  $SD = 0.720$ ), or five to eight times a month ( $M = 3.235$ ,  $SD = 0.797$ ). For the average quantity of wine consumed per event, respondents who had one to six glasses of wine had higher perceived physical health benefits. Respondents who drank more than one bottle ( $M = 0.628$ ,  $SD = 0.879$ ) were less concerned with physical health benefits than those who drank less. Wine preference showed a significant difference for red and white wine. Respondents who preferred white wine ( $M = 3.519$ ,  $SD = 0.804$ ) perceived more physical health benefits of wine than respondents who preferred red wine ( $M = 3.174$ ,  $SD = 0.709$ ). Regarding information source, there was a significant difference between newspapers and magazines ( $M = 4.000$ ,  $SD = 0.596$ ) and the Internet ( $M = 3.120$ ,  $SD = 0.710$ ) in terms of the perceived physical health benefits of wine consumption.

**Table 6.** Effect of the physical health benefits of wine when purchasing wine.

Physical Health Benefits		Mean ± SD	F	p
Monthly wine consumption frequency	One time or less	3.320 ± 0.586 <sup>a</sup>	3.958	0.004
	Two to four times	3.304 ± 0.720 <sup>a</sup>		
	Five to eight times	3.235 ± 0.797 <sup>a</sup>		
	9 times and over	2.785 ± 0.817 <sup>b</sup>		
Average quantity of wine consumed per event	Every day	2.666 ± 0.471	6.815	0.000
	120 mL or less (about 1 glass)	3.346 ± 0.670 <sup>a</sup>		
	121–360 mL (about 2–3 glasses)	3.367 ± 0.688 <sup>ac</sup>		
	361–750 mL (about 4–6 glasses)	3.095 ± 0.668 <sup>ad</sup>		
	Over 750 mL (about more than one bottle)	2.628 ± 0.879 <sup>bd</sup>		
Wine preferences	Red	3.174 ± 0.709 <sup>a</sup>	2.624	0.035
	White	3.519 ± 0.804 <sup>b</sup>		
	Rosé	3.666 ± 0.527		
	Sparkling	3.261 ± 0.580		
Information source	Others	3.375 ± 0.478	2.513	0.022
	Family and friends	3.301 ± 0.727		
	Previous experience	3.148 ± 0.628		
	Experts' or salespersons' recommendation	3.404 ± 0.632		
	Newspapers and magazines	4.000 ± 0.596 <sup>a</sup>		
	Internet	3.120 ± 0.710 <sup>b</sup>		
	Exhibitions	3.533 ± 0.415		
	Others	3.166 ± 0.723		

Means and standard deviations for the different purchasing behaviors by questions with different superscript letters are significantly different at a  $p < 0.05$  based on Games–Howell tests.



## 5. Discussion

This study aimed to investigate how consumers perceive the physical and mental health benefits of wine consumption and wine consumption behaviors. The literature on wine and health is not scarce; however, studies comparing the perceived physical and mental benefits of wine are limited. While it is hard to argue that ‘mental health benefits of wine’ have not been investigated vis-à-vis wine consumption, it may have been covered by the phrases “hedonic” or “emotional response”. Studies claim that consumers drink wine not only for the physical health benefits, but also because of psychological and hedonic motives [1,35], including relaxation [34,37], esthetics [34,38], and calmness [37]. In addition, previous studies [35,37,49] investigated the functional or emotional perceptions of consumers; however, the physical and mental health benefits of wine were not compared. Hence, this study contributes to the literature on wine consumer behaviors in a specific area based on the perceived physical and mental healthfulness of wine.

Results suggest that consumers’ perceptions regarding the consumption of wine were more focused on mental health benefits than physical health benefits, which has not been found previously. Consumers who believed in the mental health benefits of wine preferred wines priced at a medium range over those priced lower, suggesting that consumers looking for rest consider wine that is affordable but not cheap. Consumers may perceive that wine priced in this range enhances their self-respect. In other words, respondents preferred this medium price range, suggesting that mental health benefits do not necessarily relate to the highest or lowest priced wine. In contrast to organic wine, which is perceived to have physical health benefits and is more expensive than non-organic wine, this study found that a high price does not necessarily translate into a high level of perceived mental health benefits.

Monthly wine consumption frequency and average quantity of wine consumed also showed that wine consumption in moderation is related to perceived mental health benefits. Compared to the fact that about forty percent of the respondents consumed wine once a month or less, consumers concerned with mental health benefits had five to eight times the monthly consumption frequency. Consumers who believed in physical health benefits drank once a month or less, suggesting they understood wine to be an alcoholic beverage [4] with some proven physical health benefits.

Interestingly, the frequency of wine consumption showed some differences between mental and physical health benefits. The mental health benefit might suit consumers’ needs, encouraging more frequent consumption of wine than in those who believe in the physical health benefits. Furthermore, the quantity of wine consumed showed the same pattern as frequency. These results suggest that respondents who believed in both the mental and physical health benefits of wine consumed less than three glasses, i.e., a moderate amount [5]. Thus, drinking wine in moderation is strongly related to consumers’ perceptions of being healthy. Promoting healthy wine consumption could result in increased wine sales and favorable attitudes towards drinking alcoholic beverages in moderation.

One finding of this study is that consumers who believe in the physical health benefits of wine prefer white wine over red wine, unlike previous findings [49]. Preference may be a more important factor than the physical health benefits of wine when consumers are purchasing wine. Previously, the effect of the health benefits of wine was controversial when purchasing wine [10,29]. Samoggia (2016) [49] found wine consumers to be dichotomous, that is, health-oriented and non-health-oriented. This study also suggested that the physical health benefits of wine are not enough of a driver to make a purchasing decision. As previous studies have demonstrated, healthiness does not affect consumer choices, which may be a result of the fact that consuming alcoholic beverages is already harmful or at least not beneficial for health. However, the mental health benefits of wine may convince consumers who fear drinking alcoholic beverages to consume wine in moderation. Considering such benefits, it will broaden the options available to wine consumers.

Similar to Yoo’s (2013) [13] study, consumers preferred to purchase wine at a supermarket and mostly consumed wine at home with family, suggesting that wine is no longer

a beverage for a special event but rather a daily beverage. They also preferred reasonable prices for a bottle of wine. However, Koreans are still in a premature stage of wine consumption as their wine consumption frequency per month is much lower than that of Australians [13], Americans [7], and Europeans (French, Italian, and Spanish) [12]. Korean wine consumption patterns might evolve to be more similar to those of Western countries as wine consumption culture changes over time, and wine consumption may increase with age and experience [28]. In addition, an increase in wine consumption by single households alone may require the wine industry to produce more wine in smaller bottles. Wine products now come in a variety of packaging options, such as cans, bottles that do not require skewers, and smaller bottles; however, not all wines come in different varieties. In order to accommodate changes in consumer behavior involving wine consumption and purchasing, wine products need to come in a wider range of sizes.

This study determined some useful marketing tools from the results showing significant differences in wine consumption. Consumers have unique behaviors when they drink wine regarding where they purchase it, price, where they consume it, frequency and quantity of wine consumption, companions when drinking wine, and wine preferences such as price, country of origin, and variety. As wine has increasingly become a daily beverage, consumers' preferences have varied. Markets may need to focus on certain consumer segments when they make a marketing plan. Wine has some health benefits, but it is an alcoholic beverage that should be consumed in moderation. Furthermore, for a healthier drinking environment for wine consumers, it might be helpful to present the health benefits of wine in marketing materials. Introducing low-alcohol wine could entice health-aware consumers [39,50]. In addition, acknowledging physical and mental health benefits could create a more positive environment regarding wine consumption. For example, words describing emotions may capture consumers' attention [3,38,51]. In Korea, advertising laws concerning alcoholic beverages prohibit messages claiming that drinking alcoholic beverages improves general health, promotes exercise ability, heals disease, or improves mental health [52]. As this study's findings show that consumers who believe in physical health benefits trust information in newspapers and magazines over the Internet, this signifies that they believe in the expertise of newspapers and magazines. Hence, utilizing expert opinions on the healthfulness of wine in newspapers and magazines might help promote and convey these messages to consumers.

## 6. Conclusions, Limitations, and Future Research

The results of this study are important to academia and the wine industry. This study adds to the literature on the physical and mental health benefits of wine consumption. Previous studies focused on the health benefits of wine, particularly to the cardiovascular system, but studies on mental health benefits have been scarce. Many studies examine the emotional effects of drinking wine; however, to our knowledge, the term 'mental health benefits,' which has the same status as physical health benefits, has not been introduced to consumer behaviors. Unfortunately, the law in South Korea prohibits content that claims drinking alcohol is beneficial to health. Therefore, wine marketing strategies should focus on moderation in the drinking of alcoholic beverages while taking into account the positive aspects of consuming wine, such as a pleasant social gathering atmosphere. Furthermore, introducing wine products in various sizes will help increase sales and promote drinking wine in moderation.

### *Limitations and Future Research*

However, this study has some limitations. Measurements for the physical and mental health benefits of wine consumption were limited. Additionally, this study measured perceptions of physical and mental health when consuming wine rather than actual healthiness in terms of physical and mental health. Due to the paucity of literature on the mental health benefits of wine, only a few questions were designed and asked. Future research should include more detailed measurements describing physical and mental health benefits with

a broader range of respondents to allow for results with greater generalizability. Mental health benefits should be tested with a cognitive function. In addition, future studies need to elaborate on the non-physical health benefits of wine consumption in comparison to the physical health benefits. What we consume is connected to our health. Wine is an alcoholic beverage with some known health benefits. Further research should expand the scope of health to not only physical health but also mental health as well.

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