Securing Global Health: Global Citizenship and Covid-19 Awareness

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Abstract
The aim of this study was to investigate the relationship between prospective social studies teachers' global citizenship levels and their COVID-19 awareness levels. To do that, Relational survey model, one of the quantitative research methods, was used. The sample consisted of 409 prospective social studies teachers selected by simple random sampling method from six universities in Turkey. Global Citizenship Scale (GCS), The Coronavirus (COVID-19) Awareness Scale (CAS), and the Personal Information Form developed by the researchers were used in data collection. The t-test, Pearson Correlation Analysis and Multiple Regression Analysis were per-formed to analyze data. A positive and significant relationship between the participants’ global citizenship levels and their COVID-19 awareness levels was found. In addition, Multiple Regression Analysis revealed that the social responsibility, global competence and global civic engagement sub-scales of global citizenship explained for 22.2% of the total variance of participants' contagion precaution awareness, 12.2% of the total variance of awareness of following current developments, and 14.3% of “the total variance of hygiene precaution awareness

Keywords
Covid-19, coronavirus awareness, global citizenship, global health, prospective teachers, social studies

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Introduction

COVID-19 has paved the way for the world to undergo an unprecedented transformation. From the economy to health, social life and many other fields, the world have witnessed a period of great changes after the pandemic. COVID-19, which is the biggest global health crisis since the Second World War (Boschele, 2020), has caused people to cooperate and act together. All over the world, people share common feelings. They are fearing, grieving and struggling together, and engage in joint social distancing today in order to be closer tomorrow. Feeling the same, people are working towards a common goal, possibly more than ever before, to combat COVID-19 irrespective of their status, language, beliefs or identities. Although it is shared through negative conditions, this situation is actually a form of global citizenship (Kim, 2020).

COVID-19, which spread to all continents in only four months, led to great human loss and economic costs (Ongel et al., 2020). In order to control the pandemic, governments have closed their borders, restricted travel, and even tried practices such as quarantine and isolation. Similar measures taken all over the world have brought to mind the question “Will COVID-19 be the end of global citizenship?” (Calzada, 2020), and sometimes the COVID-19 pandemic has led to debates on the role of global citizenship education (Shuttleworth, 2020). These discussions paved the way for the global citizenship framework to transform and cover global health problems such as COVID-19 (Hollings, 2020; Stoner et al., 2017).

The aim of global citizenship is to contribute to educate citizens who contribute to the solution of global problems (Estellés & Fischman, 2020; Torres & Bosio, 2020). Global citizenship can also play an important role in raising awareness of global health issues such as COVID-19 since global citizens have a tendency to be sensible and responsible not only for local health problems but also for the global health problems (Shuttleworth, 2020, p. 69). In this sense, studies in the literature reveal the relationship between global citizenship and global health problems. Kim and Han (2018) found that there was a moderate and positive relationship between the global citizenship levels of nursing students and their global health competencies. Stoner et al. (2019) argued that promoting global citizenship in higher education institutions would play an important role in the combat against non-infectious diseases. They also stated that global citizens who are aware of global health issues and the connection between individual health and global health tend to adopt healthier lifestyles. Hanson (2010) stated that the global health course, which is given through internationalized curricula model, promotes global citizenship and allows to bridge the gap between local and global health.
problems. According to Hollings (2020), the understanding of global citizenship is the foundation of pandemic citizenship, which focuses on global health. Similarly, Stoner et al. (2014) stated that global citizenship is the key to securing global health.

Even though countries’ health systems and state policies play a significant role in combating the pandemic, which is a global problem, the behavior and attitudes of people individually and socially can also be effective in terms of the course of the pandemic (Bilgin, 2020, p. 239). For this reason, through the media and social networks such as Twitter, it has been trying to raise awareness on issues such as not leaving the house if not necessary, avoiding being in crowded environments, giving importance to hygiene, paying attention to social distance and using masks (Ekiz et al., 2020, p. 152). The infection course of the pandemic can be reduced and thus the epidemic can be brought under control if COVID-19 awareness is developed in citizens. Social studies lesson and teachers can play an essential and strategic role in raising global citizens who are aware of global health problems (Içen & Akpinar, 2012, p. 287). Social Studies lesson can contribute to global citizenship education and to increase COVID-19 awareness level due to its content, objectives, knowledge, skills and values that it aims to gain to students. It seems that the COVID-19 pandemic will continue and new epidemics will emerge in the future (Cicék, 2020). For this reason, prospective social studies teachers need to have a high COVID-19 awareness level and receive global citizenship education. Therefore, it is important to determine prospective social studies teachers’ global citizenship level and COVID-19 awareness levels and to examine their relationship.

There are a number of studies investigating the effects of the COVID-19 pandemic on education in the literature. Chaturvedi et al. (2021) investigated the effects of the COVID-19 pandemic on students at various educational institutions in India's Delhi - National Capital Territory. Aristovnik et al. (2020) examined the effect of the COVID-19 pandemic on 30,383 higher education students from 62 countries. Similarly, Cicha et al. (2021) investigated the expectations of first-grade students for distance education, which was urgently adopted in schools and higher education institutions in Poland as a result of the global pandemic. Furthermore, Peimani and Kamalipur (2021) discussed the rapid transition from face-to-face to online teaching during the lockdown in the UK in terms of challenges and opportunities related to learning and teaching activities, assessment, feedback and digital platforms. Paudel (2020) investigated the perspectives of teachers and students in Nepal towards online practices in higher education, while Chakrabory et al. (2020) examined the views of postgraduate students at a university in India towards online education. Similarly, Kaysi (2020) examined the distance education carried out in Turkey during the COVID-19 pandemic based on the opinions of the participants.
In the literature, there are a limited number of studies examining the prospective social studies teachers’ views of the COVID-19 pandemic. Ari and Kanat (2020) investigated the opinions of prospective social studies and science teachers about COVID-19 during the COVID-19 pandemic. In addition, Celik (2021) investigated the experiences of prospective social studies teachers in the distance education during the COVID-19 pandemic. Gurel and Er (2020) tried to determine the values that were regarded important by prospective social studies teachers in combatting with pandemics such as COVID-19. However, to the best of the researchers’ knowledge, there is no study on the relationship between prospective social studies teachers’ global citizenship levels and their COVID-19 awareness levels.

Furthermore, the determination of independent variables (gender and Twitter usage) was based on the literature. Gender has been an important research topic in both global citizenship studies and COVID-19-related research. Numerous studies have examined the impact of gender on COVID-19 awareness (Zhao, 2022), outcomes (Gomez et al., 2021; Klein et al., 2020; Pela et al., 2022), and gender-related differences in general (Gebhard et al., 2020; Penna et al., 2020). Twitter has become an important source of news during the COVID-19 pandemic. Allow an intense global exchange of ideas (Ouaynor & Sturm, 2019, p. 117) and the use of "hashtag" and "@" makes Twitter ideal for citizenship education (Journell et al., 2013, p. 469). Hashtag is a feature that automatically connects and groups all tweets that use the same hashtag, which allows users to connect around topics of interest even if they do not follow or know each other. "@" is a feature that allows users to address a particular user, institution or organization directly (Ouaynor & Sturm, 2019). Due to these features, Twitter has transformed into a platform where global and political views are expressed on many political, social, cultural and economic issues (Bollen at al., 2011). Twitter, which allows students to interact with others from different countries and political views by removing geographical barriers, may develop political and cultural tolerance (Journell et al., 2013, p. 477). Twitter may also enable students to communicate with other people in a tolerant and equitable way, to develop intercultural understanding, to adopt ethical behaviors and to acquire a critical approach through digital participation (Gleason & Manca, 2020, p. 1). In addition, Twitter can help individuals to develop global awareness, cooperate with other people in the world, and express their ideas and thoughts on solving global problems (Cifuentes et al., 2011, p. 309). Besides, active Twitter use by politicians, journalists, academics and intellectuals (Gudekli, 2016, p.152) enables individuals to obtain first-hand information regarding political and social developments in the global world (Engin & Sarsar, 2015, p. 153). In this context,
an attempt was made to determine the extent to which participants’ gender, and Twitter usage affect their levels of global citizenship and COVID-19 awareness.

In sum, it is thought that determining the relationship between global citizenship, which is considered to play a key role in securing global health, and COVID-19 awareness levels will contribute to the literature. In this sense, the aim of this study is to examine the relationship between prospective social studies teachers’ global citizenship levels and their COVID-19 awareness levels. For this purpose, answers to the following questions were sought:

1) Do prospective social studies teachers’ global citizenship levels and COVID-19 awareness levels differ in terms of their gender and Twitter use?
2) Do prospective social studies teachers’ global citizenship levels significantly predict their COVID-19 awareness levels?

Method

The aim of this study was to investigate the relationship between prospective social studies teachers’ global citizenship level and their COVID-19 awareness levels, and to determine whether these levels differ according to some variables. To do that, the relational survey model, one of the quantitative research methods, was used. Survey, in which the views of the participants or their interests, skills, abilities, attitudes etc. are determined, is conducted on larger samples compared to other studies. The relational survey model, on the other hand, is a research model that aims to determine the existence and degree of change between two or more variables (Karasar, 2017, p.114).

Population and sample

The population of the research consisted of first, second, third and fourth grade prospective teachers studying in the Social Studies Teaching department of Education Faculties in Turkey in the 2020-2021 academic year. The sample of the study consisted of 409 prospective social studies teachers selected using simple random sampling method from six Turkish universities having a Social Studies Teaching undergraduate program. Demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic characteristics of the participants.

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Groups</th>
<th>(n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>273</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>136</td>
<td>33.3</td>
</tr>
</tbody>
</table>
As shown in Table 1, 66.7% of the participants were female and 33.3% were male. 20.3% of the participants were in first grade, 22.5% were in second grade, 22.2% were in third and 35% were in fourth grade.

**Data collection tools**

*Personal information form*

The Personal Information Form was developed by the researchers to obtain information about the participants’ gender, grade level and Twitter use.

*Global citizenship scale (GCS)*

The Global Citizenship Scale was developed by Morais and Ogden (2011) and adapted into Turkish by Sahin and Cermik (2014), and validity and reliability analyzes were performed. The original scale was in a five-point Likert type format and consisted of 30 items and three sub-scales: Social Responsibility (6 items), Global Competence (11 items), and Global Civic Engagement (13 items). The Social Responsibility dimension measures the perceived level of mutual dependence and social concern towards others, society, and the environment. Items in this dimension include statements like "I think that people around the world get the rewards and punishments they deserve" and "In times of scarcity, it is sometimes necessary to use force against others to get what you need." The Global Competence dimension assesses being open-minded and respectful towards other cultures, ideas, and thoughts, as well as measuring intercultural communication skills. Examples of items in this dimension are "I know several ways in which I can make a difference on some of this world's most worrisome problems" and "I am informed of current issues that impact international relationships." Finally, the Global Civic Engagement dimension encompasses recognizing local, national, and global issues and addressing them through various actions. Items in this dimension include "Over the next 6 months, I plan to get involved with a global humanitarian organization or project" and "Over the next 6 months, I will contact a newspaper or radio to express my concerns about global environmental, social, or political problems." Scoring of the scale is from strongly disagree (1) to strongly agree (5). All of the items in the social responsibility sub-scale are reverse scored. The adaptation study of the scale was carried out on 429 university students and expert
opinions were taken for Turkish language validity. Exploratory and confirmatory factor analysis was performed to determine the latent structure of the scale. As a result of EFA, a structure consisting of 3 factors and 30 items was obtained, which explained 44.77% of the total variance. For reliability, internal consistency, split-half and test-retest techniques were used and the reliability coefficients were found as follows: Cronbach alpha = .76, Spearman Brown split-half reliability coefficient = .75 and test-retest reliability coefficient = .75. In the present study, Cronbach's alpha coefficient for the entire scale which was applied to 409 people was found to be .93.

Coronavirus (COVID-19) awareness scale
The Coronavirus (COVID-19) Awareness Scale was developed by Bilgin (2020) to determine COVID-19 awareness levels of individuals. During the scale development process, 191 participants were involved in exploratory factor analysis and 212 in confirmatory factor analysis. A structure consisting of 17 items and 3 factors was obtained as a result of the exploratory factor analysis. The three-factor structure explained 62% of the total variance of the scale. Confirmatory factor analysis revealed that the fit indices were within acceptable limits (χ²/df = 231.179, SRMR = .05, GFI = .90, AGFI = .85, CFI = .95, TLI = .94, IFI = .95, NFI = .91 RMSEA = .07). The first factor of the 5-point Likert type scale, Contagion Precaution Awareness (CPA), consists of 9 items, the second factor, Awareness of Following Current Developments (AFCD), has 4 items, and the third factor Hygiene Precaution Awareness (HPA) contains 4 items. CPA consists of awareness regarding measures to minimize the risk of transmission, such as practicing social distancing and avoiding crowded environments. Items in this dimension include statements like "I pay attention to social distancing with other people" and "I avoid behaviors like hugging, kissing, or shaking hands in my daily life." AFCD includes being aware of current developments related to COVID-19 through sources like news and social media. Items in this dimension include "I follow news about COVID-19 on social media" and "I keep track of information and updates about COVID-19 in other countries." HPA refers to awareness of hygiene measures that need to be taken to prevent the spread of COVID-19. Examples of items in this dimension are "I wear gloves when going outside" and "I clean products brought into the house (shopping bags, product packaging, etc.) from the outside." The Cronbach Alpha internal consistency coefficient of the scale was found to be .93 for the first factor, .87 for the second factor and .82 for the third factor. In the present study, the Cronbach Alpha internal consistency coefficient of the scale was found to be .94 for the first factor, .90 for the second factor and .80 for the third factor.
Data collection and analysis

The data were collected via Google Forms between 04.01.2021 and 23.03.2021 due to the COVID-19 pandemic. Before the application, the participants were informed about the aim and scope of the study, and they were told that the data would only be used for scientific purposes. In addition, consent form was obtained from the participants, stating that they participated in the study voluntarily and that they could stop responding at any time.

SPSS 23.0 statistical package program was used in data analysis. In the SPSS program, the gender variable is coded as "Male (1) / Female (0)", the COVID-19 awareness variable is coded as "Not Following (0) / Following (1)", and the Twitter Usage variable is coded as "Not Using Twitter (0) / Using Twitter (1)". Independent sample t-test was used to reveal whether there was a statistically significant difference between prospective social studies teachers’ global citizenship levels and COVID-19 awareness as well as gender and Twitter use. Furthermore, Pearson Product Moments Correlation Coefficient was used to determine the relationship between global citizenship levels and COVID-19 awareness levels. Multiple Regression Analysis was performed in order to examine the predictability of global citizenship levels on COVID-19 awareness levels. In the research, all subscales of the Global Citizenship Scale were determined as independent variables, while the subscales of the COVID-19 Awareness Scale, namely BTF, GGTF, and HTF, were identified as dependent variables. In this regard, multiple linear regression analysis was conducted to determine the predictive role of social studies teacher candidates' levels of social responsibility, global competence, and global civic engagement on the levels of CPA, AFCD, and HPA, respectively. Before the analysis, the normality of the data was examined. The normality analysis showed that the arithmetic mean, mode and median values were close to each other, and the skewness and kurtosis coefficients were within the limits of ±1.5 and close to 0 (Table 2). According to Tabachnick and Fidel (2013), skewness and kurtosis values between -1.5 and +1.5 indicate that the data are normally distributed. In addition, the histogram, Q-Q plot and box plots of the data showed a normal distribution.

In order to perform multiple linear regression analysis, a number of assumptions must be met. The Durbin-Watson coefficient was found to be between 1.800 and 1.992. A value close to 2 indicates that there is no autocorrelation in the model (Teo, 2014). The fact that the tolerance values changed between .546 and .947 and the VIF values varied between 1.05 and 1.83 indicated that there is no multicollinearity in the data set (Pallant, 2015). In addition, the bilateral correlation coefficients between the independent variables were found below .90 (Cokluk et
al., 2012). Besides, the kurtosis and skewness values varied between -1.5 and +1.5. The kurtosis and skewness values within the ±1.5 limit indicate a normal distribution (Pituch and Stevens, 2016: 228). These results showed that the data met the assumptions of multiple linear regression analysis.

**Ethical permissions**

In this study, all the rules stated in the "Turkish Higher Education Institutions Scientific Research and Publication Ethics Guidelines" were adhered to. None of the actions mentioned under the title "Actions Contrary to Scientific Research and Publication Ethics" in the second section of the guidelines were performed. The research was approved as ethically compliant with the principles by the Ethics Committee of Firat University Social and Human Sciences Research, with the decision number 27 of the 4th meeting held on 25.12.2020.

**Findings**

The findings of the study are presented in this section. In this context, the data obtained from the participants were analyzed using the T-test, One-Way, Pearson Correlation Analysis and Multiple Regression Analysis. Table 2 shows descriptive statistics on the scales.

**Table 2.** Descriptive statistics on global citizenship and COVID-19 awareness levels of prospective social studies teachers.

<table>
<thead>
<tr>
<th>Scales</th>
<th>Sub-Scales</th>
<th>N</th>
<th>( \bar{x} )</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Citizenship</td>
<td>Social Responsibility</td>
<td>409</td>
<td>4.09</td>
<td>.70</td>
<td>-1.035</td>
<td>1.469</td>
</tr>
<tr>
<td></td>
<td>Global Competence</td>
<td>409</td>
<td>3.30</td>
<td>.89</td>
<td>-.793</td>
<td>.226</td>
</tr>
<tr>
<td></td>
<td>Global Civic Engagement</td>
<td>409</td>
<td>2.90</td>
<td>1.09</td>
<td>-.090</td>
<td>-.874</td>
</tr>
<tr>
<td>Coronavirus (COVID-19)</td>
<td>Contagion Precaution</td>
<td>409</td>
<td>3.98</td>
<td>.90</td>
<td>-.770</td>
<td>-.211</td>
</tr>
<tr>
<td>Awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Awareness of Following</td>
<td>409</td>
<td>3.58</td>
<td>1.06</td>
<td>-.292</td>
<td>-.890</td>
</tr>
<tr>
<td></td>
<td>Current Developments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hygiene Precaution</td>
<td>409</td>
<td>3.36</td>
<td>.97</td>
<td>-.204</td>
<td>-.721</td>
</tr>
</tbody>
</table>

As shown in Table 2, the participants’ social responsibility (\( \bar{x} = 4.09 \)) scores were at the level of "agree", and global competence (\( \bar{x} = 3.30 \)) and global civic participation (\( \bar{x} = 2.90 \)) sub-scale scores were at the level of "partially agree".

COVID-19 awareness levels of the participants revealed that contagion precaution awareness (\( \bar{x} = 3.98 \)) and awareness of following current developments (\( \bar{x} = 3.58 \)) scores were at the level of “usually”, and hygiene precaution awareness (\( \bar{x} = 3.36 \)) scores were at the level of “often”.

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Findings based on gender

T-test was used to investigate whether there was a significant difference between participants’ global citizenship levels and COVID-19 awareness levels in terms of gender. Findings based on gender are presented in Table 3.

<table>
<thead>
<tr>
<th>Scales</th>
<th>Sub-Scales</th>
<th>Gender</th>
<th>N</th>
<th>( \bar{x} )</th>
<th>Sd</th>
<th>df</th>
<th>t</th>
<th>p</th>
<th>( \eta^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Citizenship</td>
<td>Social Responsibility</td>
<td>Male</td>
<td>136</td>
<td>4.13</td>
<td>.71</td>
<td>407</td>
<td>.745</td>
<td>.457</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>273</td>
<td>4.08</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global Competence</td>
<td>Male</td>
<td>136</td>
<td>3.21</td>
<td>1.03</td>
<td>407</td>
<td>-1.342</td>
<td>.181</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>273</td>
<td>3.34</td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Global Civic Engagement</td>
<td>Male</td>
<td>136</td>
<td>2.76</td>
<td>1.16</td>
<td>407</td>
<td>-1.815</td>
<td>.071</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>273</td>
<td>2.98</td>
<td>1.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronavirus (COVID-19)</td>
<td>Contagion Precaution</td>
<td>Male</td>
<td>136</td>
<td>3.77</td>
<td>.92</td>
<td>407</td>
<td>-3.267</td>
<td>.001**</td>
<td>.02</td>
</tr>
<tr>
<td></td>
<td>Awareness</td>
<td>Female</td>
<td>273</td>
<td>4.08</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Awareness of Following</td>
<td>Male</td>
<td>136</td>
<td>3.54</td>
<td>1.07</td>
<td>407</td>
<td>-522</td>
<td>.602</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Current Developments</td>
<td>Female</td>
<td>273</td>
<td>3.60</td>
<td>1.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hygiene Precaution</td>
<td>Male</td>
<td>136</td>
<td>2.96</td>
<td>1</td>
<td>407</td>
<td>-6.071</td>
<td>.000**</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Awareness</td>
<td>Female</td>
<td>273</td>
<td>3.55</td>
<td>.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<.01**

Table 3 showed that there was no significant difference between participants’ scores of social responsibility \( [t(407) = .745; \ p>.05] \), global competence \( [t(407) = -1.342; \ p>.05] \) and global civic participation \( [t(407) = -1.815; \ p>.05] \) sub-scales in terms of gender.

COVID-19 awareness levels of the participants in terms of gender revealed that there was a significant difference in favor of female participants in Contagion Precaution Awareness \( [t(407) = -3.267; \ p<.05] \) and Hygiene Precaution Awareness \( [t(407) = -6.071; \ p<.05] \) sub-scales. The effect size showed a small difference in the Contagion Precaution Awareness \( (\eta^2 = .02) \) sub-scale and the overall scale \( (\eta^2 = .03) \), and a medium difference in the hygiene precaution awareness \( (\eta^2 = .08) \) sub-scale. Finally, no significant difference was found in Awareness of Following Current Developments sub-scale in terms of gender.
**Findings based on twitter use**

T-test was used to investigate whether there was a significant difference between participants’ global citizenship levels and COVID-19 awareness levels in terms of Twitter. Table 4 shows findings based on Twitter use.

**Table 5.** T-test results on participants’ global citizenship levels and COVID-19 awareness levels in terms of twitter use.

<table>
<thead>
<tr>
<th>Scales</th>
<th>Sub-Scales</th>
<th>Twitter</th>
<th>N</th>
<th>(\bar{x})</th>
<th>Sd</th>
<th>df</th>
<th>t</th>
<th>p</th>
<th>(\eta^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Do not use</td>
<td>252</td>
<td>4.07</td>
<td>.70</td>
<td>407</td>
<td>-1.047</td>
<td>.296</td>
<td>-</td>
</tr>
<tr>
<td>Global Citizenship</td>
<td>Social Responsibility</td>
<td>Use</td>
<td>157</td>
<td>4.14</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do not use</td>
<td>252</td>
<td>3.19</td>
<td>.91</td>
<td>407</td>
<td>-3.312</td>
<td>.001</td>
<td><strong>.02</strong></td>
</tr>
<tr>
<td></td>
<td>Global Competence</td>
<td>Use</td>
<td>157</td>
<td>3.48</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do not use</td>
<td>252</td>
<td>2.75</td>
<td>1.05</td>
<td>407</td>
<td>-3.569</td>
<td>.000</td>
<td><strong>.03</strong></td>
</tr>
<tr>
<td></td>
<td>Global Civic Engagement</td>
<td>Use</td>
<td>157</td>
<td>3.15</td>
<td>1.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contagion Precaution</td>
<td>Do not use</td>
<td>252</td>
<td>3.96</td>
<td>.90</td>
<td>407</td>
<td>-.586</td>
<td>.558</td>
<td>-</td>
</tr>
<tr>
<td>Awareness</td>
<td>Use</td>
<td>157</td>
<td>4.01</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Awareness of Following</td>
<td>Do not use</td>
<td>252</td>
<td>3.52</td>
<td>1.07</td>
<td>407</td>
<td>-1.420</td>
<td>.156</td>
<td>-</td>
</tr>
<tr>
<td>Current Developments</td>
<td>Use</td>
<td>157</td>
<td>3.68</td>
<td>1.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hygiene Precaution</td>
<td>Do not use</td>
<td>252</td>
<td>3.39</td>
<td>.97</td>
<td>407</td>
<td>1.043</td>
<td>.298</td>
<td>-</td>
</tr>
<tr>
<td>Awareness</td>
<td>Use</td>
<td>157</td>
<td>3.29</td>
<td>.97</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<.01**

Table 5 showed that there was a significant difference in favor of participants using Twitter in global competence \(t(407) = -3.312; p<.05\) and global civic engagement \(t(407) = -3.569; p<.05\) sub-scales. The effect size indicated that this difference was small in global competence \(\eta^2 = .02\) and global civic engagement \(\eta^2 = .03\) sub-scales. Therefore, it can be put forward that participants using Twitter had higher levels of global competence, global civic engagement than those who do not use Twitter. A significant difference was not found in social responsibility \(t(407) = -1.047; p> .05\) sub-scale.

For COVID-19 awareness, there was not a significant difference in the contagion precaution awareness \(t(407) = -.586; p> .05\), awareness of following current developments \(t(407) = -1.420; p> .05\) and hygiene precaution measures\(t(407) = 1.043; p> .05\) sub-scales.
Findings on the relationship between variables

The relationship between participants’ global citizenship levels and COVID-19 awareness levels was investigated using Pearson Correlation Analysis. The results are presented in Table 5.

Table 6. Pearson correlation analysis results on the relationship between participants’ global citizenship levels and COVID-19 awareness levels.

<table>
<thead>
<tr>
<th>Sub-Scales</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Social Responsibility</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Global Competence</td>
<td>.228**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Global Civic Engagement</td>
<td>.178**</td>
<td>.665**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Contagion Precaution Awareness</td>
<td>.108*</td>
<td>.476**</td>
<td>.289**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Awareness of Following Current Developments</td>
<td>.132**</td>
<td>.355**</td>
<td>.248**</td>
<td>.638**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>6. Hygiene Precaution Awareness</td>
<td>.148**</td>
<td>.371**</td>
<td>.314**</td>
<td>.739**</td>
<td>.591**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

N=409, *p<05, **p<01

Table 6 showed that there was a weak positive correlation between the level of social responsibility of the participants and their awareness of preventive measures (r=.108, p<.05), awareness of following current developments (r=.132, p<.01), and awareness of hygiene measures (r=.148, p<.01). Furthermore, a moderate positive correlation was found between the level of global competence of the participants and their awareness of preventive measures (r=.476, p<.01), awareness of following current developments (r=.355, p<.01), and awareness of hygiene measures (r=.371, p<.01). Additionally, there was a low-level positive correlation between the level of global civic engagement and awareness of preventive measures (r=.289, p<.01) and awareness of following current developments (r=.248, p<.01), and a moderate positive correlation was found with awareness of hygiene measures (r=.314, p<.01). This finding indicates that global citizenship levels citizenship (social responsibility, global competence, and global civic engagement) of prospective social studies teachers will increase with the increase in their COVID-19 awareness level awareness (awareness of preventive measures, awareness of following current developments, and awareness of hygiene measures).
Findings on regression analysis

Multiple Regression Analysis was performed in order to investigate whether participants’ global citizenship levels predicted their coronavirus awareness levels. The results are presented in Tables 7, 8 and 9.

Table 7. Multiple regression analysis results regarding the predictiveness of participants’ global citizenship levels on contagion precaution awareness levels.

<table>
<thead>
<tr>
<th>Predicted Variable</th>
<th>Predicting Variables</th>
<th>B</th>
<th>Sd</th>
<th>B</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contagion Precaution Awareness</td>
<td>Fixed value</td>
<td>2.413</td>
<td>.168</td>
<td>14.353</td>
<td>.000**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Responsibility</td>
<td>.001</td>
<td>.058</td>
<td>.000</td>
<td>.011</td>
<td>.991</td>
</tr>
<tr>
<td></td>
<td>Global Competence</td>
<td>.510</td>
<td>.059</td>
<td>.509</td>
<td>8.606</td>
<td>.000**</td>
</tr>
<tr>
<td></td>
<td>Global Civic Engagement</td>
<td>-.040</td>
<td>.048</td>
<td>-.049</td>
<td>-.837</td>
<td>.403</td>
</tr>
</tbody>
</table>

R=.478, R²=.228, Adjusted ΔR²=.222, F= 39.882, p=.000, **p<.01

As shown in Table 7, social responsibility, global competence and global civic engagement sub-scales statistically and significantly predicted the contagion precaution awareness of the participants (R=.478, R²=.228, ΔR²=.222, F=39.882, p= .000, p<.01). The t values for the regression coefficients showed that the global competence sub-scale of global citizenship scale predicted contagion precaution awareness at a statistically significant level. However, other two sub-scales of global citizenship scale (social responsibility and global civic engagement) did not significantly predict contagion precaution awareness. In this respect, social responsibility, global competence and global civic engagement sub-scales explained approximately 22% of the total variance in contagion precaution awareness.

Table 8. Multiple regression analysis results regarding the predictiveness of participants’ global citizenship levels on awareness of following current developments levels.

<table>
<thead>
<tr>
<th>Predicted Variable</th>
<th>Predicting Variables</th>
<th>B</th>
<th>Sd</th>
<th>B</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness of Following Current Developments</td>
<td>Fixed value</td>
<td>2.083</td>
<td>.211</td>
<td>9.853</td>
<td>.000**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Responsibility</td>
<td>.082</td>
<td>.072</td>
<td>.054</td>
<td>1.125</td>
<td>.261</td>
</tr>
<tr>
<td></td>
<td>Global Competence</td>
<td>.392</td>
<td>.075</td>
<td>.330</td>
<td>5.251</td>
<td>.000**</td>
</tr>
<tr>
<td></td>
<td>Global Civic Engagement</td>
<td>.019</td>
<td>.061</td>
<td>.019</td>
<td>.314</td>
<td>.754</td>
</tr>
</tbody>
</table>

R=.359, R²=.129, Adjusted ΔR²=.122, F= 19.971, p=.000, **p<.01

As shown in Table 8, the sub-scales of global citizenship scale statistically and significantly predicted participants’ awareness of following current developments.
developments (R=.359, R²=.129, ΔR²=.122, F=19.971, p=000, p<.01). The t values for the regression coefficients showed that the awareness of following current developments was statistically and significantly predicted by the global competence sub-scale of global citizenship. However, the other two sub-scales of global citizenship (social responsibility and global civic engagement) did not significantly predict the awareness of following current developments. In this respect, the sub-scales of global citizenship explained approximately 12% of the total variance in awareness of following current developments.

As shown in Table 9, social responsibility, global competence and global civic engagement sub-scales statistically and significantly predicted participants’ hygiene precaution awareness levels (R=.386, R²=.149, ΔR²=.143, F=23.689, p=000, **p<.01). The t values for the regression coefficients showed that hygiene precaution awareness was statistically and significantly predicted by the global competence sub-scale. However social responsibility and global civic engagement sub-scales did not significantly predict the hygiene precaution awareness. In this respect, social responsibility, global competence and global civic engagement sub-scales explained approximately 14% of the total variance in hygiene precaution awareness.

### Discussion

First, global citizenship levels and COVID-19 awareness levels of prospective social studies teachers were investigated in the present study. The findings revealed that the participants "agreed" the statements in social responsibility sub-scale, and they "partially agreed" the statements in global competence and global civic engagement sub-scales. In this sense, it can be argued that the social responsibility levels of the participants were high, whereas their global competence and global civic engagement levels were moderate. Considering the increasing global problems, prospective social studies teachers’ high social responsibility level is promising. However, their global competence and global civic engagement levels, which allow them to play an active role in solving local
and global problems, needs to be increased. Studies in the literature shows that the global citizenship levels of prospective social studies teachers are at medium and high levels (Cermik, 2015; Gol, 2013; Kaya & Kaya, 2012). Such a finding may be as a result of the inclusion of topics such as globalization, citizenship, current world problems, community service practices, and social project development in the social studies teaching undergraduate program. Similarly, Alabay and Yagan Guder (2019) expressed that the existing undergraduate program and the contents of the courses in this program can play an important role in raising global citizens. In this sense, Kaya and Kaya (2012) examined prospective teachers’ global citizenship perceptions in the technology age and found that prospective social studies teachers had significantly higher perceptions in the Positive Effects of Globalization sub-scale compared to Turkish and Computer Education students, and in the sub-scale Following the International Agenda than Turkish and Science Teaching students.

The participants’ COVID-19 awareness levels showed that their contagion precaution awareness and awareness of following current developments scores were at "generally" level; while their hygiene precaution awareness scores were at the level of "often". Thus, it can be put forward that the participants had a high level of contagion precaution awareness, and awareness of following current developments, and moderate level of hygiene precaution awareness. The reason for high awareness of the participants on issues such as COVID-19, personal hygiene, frequency and duration of hand washing, and social distance may be due to public awareness studies carried out in the media and social networks (Ari & Kanat, 2020). Considering that the transmission course and effects of the pandemic will decrease as a result of the awareness to be built in individuals in the combat against the COVID-19 (Bilgin, 2020, p. 240), prospective teachers’ high level of COVID-19 awareness is promising. To the best of the researchers, there is no study on COVID-19 awareness levels of prospective social studies teachers the literature. On the other hand, Karatas (2020) investigated the effects of the COVID-19 pandemic on individuals in Turkey. He found that there was an 85-90% increase in participants’ protective behaviors such as cleaning, hygiene, masks and gloves, and a 95% decrease in being in crowded environments and using public transport after the COVID-19 pandemic.

Second, the present study also investigated whether prospective social studies teachers’ global citizenship levels and their COVID-19 awareness levels showed a significant difference in terms of gender. It was concluded that the global citizenship levels did not differ significantly by gender. In other words, it was determined that the global citizenship levels of female and male participants were comparable. This may be due to the fact that prospective teachers receive the same education and training. There are studies in the literature that both support and
contradict the finding of the present study. While some studies have reported that female participants have significantly higher levels of global citizenship than male participants (Alabay & Yagan Guder, 2019; Bulut, 2019; Gul, 2020; Yavuz Eroglu & Karakus, 2020); others have found the reverse (Kaya & Kaya, 2012; Yuksel & Eres, 2018). However, a brief literature review reveals that there are more studies stating that gender does not have a significant effect on global citizenship levels (Altikutluc, 2016; Cakmak et al., 2015; Celikten, 2015; Cermik, 2015; Gol, 2013; Kayisloglu, 2016; Kocoglu & Kaya, 2020; Temel, 2016). In this respect, it can be concluded that gender is not a decisive factor in the global citizenship levels of social studies teachers.

In the present study, the examination of prospective social studies teachers’ COVID-19 awareness levels in terms of their gender showed a significant difference in favor of female participants in contagion precaution awareness and hygiene precaution awareness sub-scales. In this sense, it can be said that female participants’ contagion precaution and hygiene precaution awareness levels were significantly higher than male participants. This finding is consistent with other studies in the literature. For example, Altun (2020) found that female participants’ hygiene behavior levels were higher than that of male participants. Similarly, Stevenson et al. (2009) reported that the hygiene scores of male participants were lower compared to female. Furthermore, Karatas (2020) examined the post-traumatic growth levels of individuals, and the changes in their attitudes and behaviors during the COVID-19 pandemic process. He found that female participants’ scores on the post-traumatic growth scale and its sub-scales were higher than males. In other words, positive changes brought about in women's self-perception, life philosophies and relationships with other individuals during the COVID-19 pandemic. The high COVID-19 awareness, contagion precaution awareness, and hygiene precaution awareness levels of the female prospective social studies teachers may be as a result of the roles of women and men in the traditional society. Although the increase in women's education levels and their active role in business life as a result of modernization paved the way to significant changes in gender roles (Secgin & Tural, 2011), studies have shown that traditional perspectives on gender roles still exist (Belli & Aynaci, 2020; Ongen & Aytac, 2013; Vefikuluay et al., 2007). Some of the traditional roles attributed to women in society are to provide hygiene in home life such as cleaning, preparing food, washing dishes, and meeting the needs of family members (Ongen & Aytac, 2013, p. 13). Consequently, these duties traditional perspective imposes on women may have lead female participants to have high COVID-19 awareness, contagion precaution awareness, and hygiene precaution awareness levels. A significant difference was not found in awareness of following current developments sub-scale
in terms of gender. This may be as a result of the fact that the participants followed COVID-19 developments in the media and on social networks at a similar level.

Third, the present study investigated whether the global citizenship levels and COVID-19 awareness levels differed significantly in terms of Twitter use. The findings showed a significant difference in favor of participants using Twitter in global competence and global civic engagement sub-scales. This indicates that prospective social studies teachers using Twitter had significantly higher levels of global competence and global civic engagement. Studies in the literature show that Twitter has a significant role in increasing global citizenship, global competence and global civic participation levels. For example, Quaynor and Sturn (2019) revealed that chats on Twitter increased the knowledge and skills of social studies teachers and allowed them to establish a community adopting an identity of global educators. Twitter was also found to help teachers gain global experiences and follow important global issues such as cultural differences and environmental issues. Maguth and Yamaguchi (2013) concluded in their study after the 2011 earthquake and tsunami in Japan that Twitter can contribute to strengthening global understandings, following global events, and promoting social participation. Twitter and other social networks have helped individuals around the world reach victims, provide material and moral support, and receive information about the activities of government and non-governmental organizations. Journell et al. (2013) analyzed high school students’ tweets in the 2012 US presidential elections. They found that Twitter is potentially an important platform for students to communicate with individuals from different areas and political views, participate in political conversations, develop political and cultural tolerance, and citizenship education. Investigating how and why social studies educators use Twitter, Krutka and Carpenter (2016) showed that social studies educators use the social components of Twitter to share resources, collaborate, communicate and participate in conversations with educators around the world. Merle et al. (2019) analyzed 35,237 tweets posted by Twitter users about global identity and global citizenship, using the hashtag #globalcitizen. They found that the participants associated global citizenship with positive emotions. Colak et al. (2019) found that the internet and social networks were among the information sources of prospective social studies teachers about global citizenship. Therefore, it can be argued that Twitter use is a decisive factor in prospective social studies teacher’ global citizenship levels.

It was found as a result of the present study that the participants’ COVID-19 awareness scores did not differ significantly by Twitter use. The number of people using social media tools has increased significantly during the COVID-19 pandemic (Karatas, 2020). However, the reason for the finding that participants’ Twitter use did not significantly affect their COVID-19 awareness may be
participants’ different Twitter use purposes and information pollution about the COVID-19 on Twitter.

Fourth, the relationship between the levels of global citizenship and the levels of Covid-19 awareness among prospective social studies teachers was examined. The findings revealed a positive correlation between the participants’ levels of global citizenship (social responsibility, global competence, and global civic engagement) and their levels of Covid-19 awareness (awareness of preventive measures, awareness of following current developments, and awareness of hygiene measures). As a result, it can be concluded that as the global citizenship levels of prospective social studies teachers increase, their COVID-19 awareness levels will also increase. In line with the findings of the present study, Kim and Han (2018) found that there was a moderate and positive relationship between the global citizenship levels of nursing students and their global health competencies. It is also stated in the literature that global citizenship is quite effective in securing global health (Stoner et al., 2014). Global citizens who are aware of the connection between individual preferences and global health problems (Stoner et al., 2019, p. 131) have a tendency to be responsible for both local and global health problems (Shuttleworth, 2020, p. 69). Therefore, it can be said that individuals with high levels of global citizenship will also have a high level of awareness about global health problems such as COVID-19.

Finally, the present study examined whether the global citizenship levels of the participants predicted their COVID-19 awareness levels was. The findings showed that the social responsibility, global competence and global civic engagement sub-scales of global citizenship explained 22.2% of the total variance of contagion precaution awareness, 12.2% of the total variance of awareness of following current developments, and 14.3% of the total variance of hygiene precautions awareness. In this regard, it can be concluded that participants’ global citizenship levels significantly and positively predicted their COVID-19 awareness levels. Although there is no study in the literature that directly reveals the relationship between global citizenship and COVID-19 awareness levels of prospective social studies teachers, this finding is expected since the dominant trend in global citizenship is to contribute to the solution of global problems (Estellé & Fischman, 2020). Responsible citizens who investigate, question and propose solutions to global problems are expected to be aware of COVID-19 which is a global health problem.
Limitations and Future Research

Although the present study revealed significant findings on the relationship between prospective social studies teacher’s global citizenship level and COVID-19 awareness, it is not without some limitations. First, the data was collected online due to the COVID-19 pandemic. Second, this study is limited to 409 prospective social studies teachers from six universities in Turkey. Finally, in order to investigate the relationship between global citizenship and COVID-19 awareness from a more comprehensive and detailed perspective, similar studies should be conducted on large sample groups using mixed research method, where quantitative and qualitative research methods are used together.

Conclusion

The findings of the present study showed that the participants’ global competence and global civic engagement scores were at moderate level. In addition, the participants had a high level of contagion precaution awareness and awareness of following current developments awareness whereas they had moderate level of hygiene precaution awareness. Although it is significant to train responsible social studies teachers who are aware of global health problems, it is essential to increase global competence and global civic engagement levels that will enable them to play an active role in the solution of these problems. In this context, several activities can be organized in order to support prospective teachers to provide solutions to both local and global health problems and to put these possible solutions into practice. Furthermore, they can be encouraged to participate in non-governmental organizations and volunteer programs.

The present study showed that the participants’ global citizenship levels did not differ significantly by gender. The examination of COVID-19 awareness levels in terms of gender revealed a significant difference in favor of female participants in hygiene precaution awareness and contagion precaution awareness sub-scales. However, it was found that gender did not lead to a significant difference in awareness of following current developments sub-scale. In the light of these findings, studies should be carried out to increase contagion precaution and hygiene measures awareness of especially male prospective social studies teachers.

The present study also revealed that global competence and global civic engagement levels of the participants who used Twitter were significantly higher than those who did not use Twitter. This finding indicates that Web 2.0 tools such as Twitter should be actively used in global citizenship education. A significant difference was not found in the COVID-19 awareness levels in terms of Twitter.
use. Although Twitter is actively used by government officials, politicians, journalists, intellectuals and academics and it is a platform where information about the COVID-19 pandemic is frequently shared and updated, the reasons why it did not lead to a significant difference in COVID-19 awareness may be examined in future studies.

The aim of the present study was to examine the relationship between prospective social studies teachers’ global citizenship levels and their COVID-19 awareness levels. The findings revealed a positive correlation between the participants’ levels of global citizenship and their levels of Covid-19 awareness. In addition, this study revealed that the social responsibility, global competence and global civic engagement sub-scales of global citizenship explained 22.2% of the total variance of contagion precaution awareness, 12.2% of the total variance of awareness of following current developments, and 14.3% of the total variance of hygiene precautions awareness. In other words, the global citizenship levels of the participants significantly and positively predicted the COVID-19 awareness levels. On the basis of the findings of the present study, more attention should be paid to global citizenship education in order to increase prospective social studies teachers’ awareness about global health problems such as the COVID-19 pandemic and to secure global health.

Conflicts of interest statement

The authors declare no conflict of interests with this work. All efforts to sufficiently blind the author during peer review of this article have been made.

Consent for publication statement

The author declares that research participants’ informed consent to publication of findings – including photos, videos and any personal or identifiable information – was secured prior to publication.

Research ethics statement

The authors declare that research ethics approval for this article was provided by the by Firat University Social and Human Sciences Research Ethics Committee.
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