# RELATIONSHIP BETWEEN THE TRUST IN A HEALTH CARE SYSTEM AND ADHERENCE TO COVID-19 PREVENTIVE BEHAVIORS AMONG THE GENERAL POPULATION IN 2021

*Hanieh Shiriyan[1], Parisa Rezaii Almas[1], Taha Torabi Choplujeh[1], Mina Maheri[*2]*

1. Student Research Committee, Urmia University of Medical Sciences, Urmia, Iran.

2. PhD in Health Education & Promotion, Department of Public Health, School of Public Health, Urmia University of Medical Sciences, Urmia, Iran.

Correspondence: maheri.a@umsu.ac.ir

## ABSTRACT

### INTRODUCTION:

Identifying the factors affecting the adoption of COVID-19 preventive behaviors can be helpful in designing various interventions related to the promotion of this index. Therefore, the aim of this study was to investigate the relationship between trust in a healthcare system and adherence to COVID-19 preventive behaviors among the general population.

### METHODS:

This cross-sectional study was conducted during September 2021 and simultaneously with the fifth wave of COVID-19 in Urmia, Iran. The study's statistical population was for all people older than 18 years living in Urmia who had access to cyberspace. In this study, 504 samples were included using the snowball and convenience sampling method. Data were collected using an electronic questionnaire that consisted of three sections: demographic information, Whole Health System Trust Scale, and a researcher-made questionnaire to measure COVID-19 preventive behaviors. Data were collected through WhatsApp and analyzed using SPSS 16.

### RESULTS:

The quality of care ($\beta = 0.178$, $p = 0.003$), patient focus of providers ($\beta = 0.140$, $p = 0.010$), policies at the macro level will be without consequences for the patient ($\beta = -0.112$, $p = 0.027$), and the quality of cooperation between health care services providers ($\beta = 0.106$, $p = 0.026$), were significant predictors of COVID-19 preventive behaviors.

### CONCLUSION:

In order to promote adherence to COVID-19 preventive behaviors among the general public, it is suggested to improve the quality of care provided for the prevention and control of COVID-19; provide customer-centered cares relating to prevention and control of COVID-19; attract public trust to the macro level policies relating to prevention and control of COVID-19; and create cooperation and coordination among services providers working in the field of prevention and control of COVID-19.

### KEYWORDS

trust, health system, adherence, behavior, prevention, COVID-19

*Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021*    **1**

*Asia Pacific Journal of Health Management 2023; 18(2):i1445. doi: 10.24083/apjhm.v18i2.1445*

## INTRODUCTION

Preventive behavior is the main way to control and prevent COVID-19 [1]. The most important preventative behaviors of COVID-19 include wearing a mask; covering the mouth and nose when sneezing and coughing; washing hands with soap and water for at least 20 seconds; using disinfectants if water and soap are not available; avoiding touching eyes, nose, and mouth with contaminated hands; using personal utensils for eating; disinfection of surfaces; maintaining social distance of at least 1 meter; and avoiding crowds and travel [2].

Adherence to COVID-19 preventive behaviors by individuals in society is affected by various individual, social, cultural, and economic factors [3]. Trust in the health care system is a determinant of this index [4,5]. Investigating the issue of trust in the health care system is important because the citizens' sufficient trust in the instructions of physicians and medical institutions will improve their health but the effectiveness of health institutions will be impaired in the absence of this component in society [6]. Public trust plays a key role in supporting citizens to formulate and implement public policies. The role of trust in the prevention and eradication of the disease has been proven to everyone. Low levels of trust in the health care system eventually led to poor health outcomes and the lack of use of health services [5].

Trust in the health care system is an important and effective factor in adhering to COVID-19 preventive behaviors. Findings of studies by Chan et al. indicated that people, who had more trust in the health care system, were more likely to follow COVID-19 preventive behaviors [4]. Wong et al. also found a statistically significant positive relationship between trust in the government and the health care system with the degree of adherence to COVID-19 preventive behaviors [5].

Addressing trust in the field of COVID-19 is especially important for two reasons. First, even after nearly two years since the outbreak of this disease, there are still many unknowns about the nature of the disease, its lethality, treatment, the best ways to control and prevent it, etc [7] that can create mistrust among people in society and negatively affect the adoption of preventive behaviors. Second, the advice by governments and health care systems to people to fight the disease is obviously in contrast to our daily lives and nature as human beings and requires major and profound changes in our behavior; hence, it needs a high level of public trust so that they can deviate from their daily routine [8].

Given the above-mentioned issues, and the importance of identifying the determinants of preventive behaviors of COVID-19, the present study aimed to investigate the relationship between trust in the health care system and adherence to the COVID-19 preventive behaviors among the general public of Urmia. Based on the literature review completed, it seems that no study was conducted with the same title in Iran; hence, the findings of the present study can increase the awareness and knowledge of health decision-makers and policy-makers about determinants of COVID-19 preventive behaviors. It also leads to a positive step towards overcoming and controlling COVID-19 by the implementation of appropriate interventions to increase public trust in the health care system.

## METHODS

In the present study, the minimum number of necessary samples was equal to 469 according to the previous similar study, a standard deviation of 8.4 for the mean score of trust in the health care system [9], a statistical confidence level of 99% (z=2.576), maximum acceptable error or accuracy of d=1, and using the formula for estimating the mean of a quantitative trait in society. 504 individuals were included in the study to increase the research power.

$$n = \frac{Z_{1-\propto/2}^2 \, S^2}{d^2} = \frac{2.576^2 \, 8.4^2}{1^2} = 469$$

Samples were included in the study using the snowball sampling method, and data was collected online. Snowball sampling starts with a small pool of initial participants to nominate, through their social networks, other participants who meet the inclusion criteria and could potentially participate in the study. Inclusion criteria were as follows: age over 18 years, having a minimum education level of secondary school, access to the WhatsApp messenger program, being able to complete the questionnaire physically and mentally and having the consent to participate in the study. Exclusion criterion: an incomplete questionnaire.

This descriptive-analytical cross-sectional study was conducted during September of 2021 and simultaneously with the fifth wave of Covid-19 in Urmia, Iran. The study's statistical population was all people older than 18 years old living in Urmia who had access to cyberspace.

*Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021* **2**

*Asia Pacific Journal of Health Management 2023; 18(2):i1445. doi: 10.24083/apjhm.v18i2.1445*

The questionnaire was designed electronically and its direct link was published via the WhatsApp social network. At the beginning of the electronic questionnaire, sufficient explanations were given to the participants about the research purpose and inclusion criteria. They were assured that their participation in the study would be completely voluntary and they would be able to leave the study if they wanted, and their information would be kept confidential, and the results would be reported generally. Before completing the questionnaires, coordination was done with the samples so that if they had any questions related to the items in the questionnaire, they could contact with researcher and the researcher was committed to answer. In this way, the questionnaires were completed with the guidance of the interviewer using self-report.

The data collection tool consisted of three parts. The first part included the demographic information of the participants. The second part included the Whole Health System Trust Scale. The questionnaire was designed, and its validity and reliability were obtained by Straten et al. to measure the level of public trust in the health care system [10]. In Iran, the validity and reliability of the Persian version of the questionnaire were studied by Ebrahimipour et al., and the results indicated that the questionnaire had acceptable validity and reliability [11]. The Persian version of the tool consisted of 33 questions with 6 dimensions, including patient focus of providers (6 questions), policies at the macro level will be without consequences for the patient (6 questions), health care providers' expertise (4 questions), quality of care (9 questions), information supply and communication by care providers (6 questions), and quality of cooperation between service providers (2 questions). The tool was scored in a 5-point Likert range (very low=1, low=2, neutral=3, high=4, and very high=5). High scores in this questionnaire indicated a higher level of trust in the health care system. According to the cut-off point used by Ebrahimipour et al., If the score obtained by a participant is from zero to 20 out of 100% of the total score, it indicates very low trust in the health care system, the score of 20 to 40 indicates low trust, 40-60: moderate trust, 60-80: high trusts, and 80-100: very high trust [11].

The third part included the COVID-19 Preventive Behaviors Questionnaire. This questionnaire was designed by the research team of the present study to measure the level of adhere to COVID-19 preventive behaviors. The final version of this questionnaire contains 16 questions and all questions are scored on a 4-point Likert scale, including Never (1), Sometimes (2), Often (3), and Always (4). There is no reverse

scoring. The total score was converted into a percentile. A score ≥ 75% was designated as high, 50–75% as moderate, and ≤ 50% as low level of behavior. The questions about covid-19 preventive behaviors were designed based on the health protocols by the World Health Organization, as well as the Ministry of Health and Medical Education, Iran, and then its validity and reliability were measured and approved. It had two dimensions including individual such as frequent hand washing and social such as social distancing. Face validity (qualitative) and content validity (quantitative) were used to determine the validity. In qualitative face validity, 10 members of the target group were interviewed face to face, and were asked about the appropriateness and relationship of items, the existence of ambiguity, and misconceptions of items and words in the questionnaire, and also difficulty in understanding the items and words in the questionnaire, and if there was any problem, their opinions were taken and included in the questionnaire [12, 13]. In quantitative content validity, the questionnaire was given to 10 experts in fields related to research and instrumentation, and the content validity ratio (using the criterion of necessity) and the content validity index (using the criteria of relevance, clarity, and simplicity) were calculated. The questions with a content validity ratio of greater than 0.62 and a content validity index of greater than 0.79 were accepted [12, 13]. Cronbach's alpha coefficient measured reliability. To this end, the pilot questionnaires were given to 30 individuals in the target group. After completing the questionnaires, Cronbach's alpha coefficient was calculated to be 0.89; hence, the reliability of the tool was optimal [12, 13].

Data were analyzed in SPSS 16 using descriptive statistics (mean, standard deviation, frequency, and percentage) and analytical statistics, including Kolmogorov-Simonov test (to check the data normality), Independent t-test, One-way ANOVA, Pearson correlation, and Multiple linear regression with the Enter method. Results were considered significant at a statistical level of ($P<0.05$).

## RESULTS

Based on the research results, the mean age of the participants was 32.76±13.04 years. The average household size was four people. The majority of research units were female (53%), single (53.4%), with a bachelor's degree (35.7%), college students (28%), had medium economic status (50.2%), and owned houses (72%), and the majority

Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021    3

Asia Pacific Journal of Health Management 2023; 18(2):i1445.  doi: 10.24083/apjhm.v18i2.1445

of them also reported that they had no history of COVID-19 (58.5%) (Table 1).

**TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS**

| Variable | | n (%) | Variable | | n (%) |
|---|---|---|---|---|---|
| Gender | Male | 237(47.0) | Employment status | Housewife | 64(12.7) |
| | Female | 267(53.0) | | Government employee | 103(20.4) |
| Marital status | Single | 269(53.4) | | Self-employed | 100(19.8) |
| | Married | 235(46.6) | | Retired | 30(6.0) |
| Educational status | Middle school | 27(5.4) | | College student | 141(28.0) |
| | High school | 49(9.7) | | Worker | 45(8.9) |
| | Diploma | 86(17.1) | | Unemployed | 21(4.2) |
| | Associate degree | 70(13.9) | Housing situation | Tenant | 141(28.0) |
| | Bachelor degree | 180(35.7) | | Homeowner | 363(72.0) |
| | Master degree | 57(11.3) | History of Covid-19 | Yes | 209(41.5) |
| | Doctorate | 35(6.9) | | No | 295(58.5) |
| Economic status | Low | 44(8.7) | Age(year) | **Mean** | **SD** |
| | Medium | 253(50.2) | | 32.76 | 13.04 |
| | Good | 169(33.5) | Household size | 4.01 | 1.47 |
| | Excellent | 38(7.6) | | | |

Abbreviations: n, number; SD, standard deviation

Table 2 presents the mean score of trust in the health care system and its dimensions, as well as the mean score of adherence to COVID-19 preventive behaviors. Among the 6 dimensions of trust in the health care system, the lowest mean score belonged to policies at the macro level will be without consequences for the patient (score of about 57.65 out of 100), and the maximum score belonged to the quality of cooperation between service providers (score of about 66.38 out of 100). The participants obtained about 62.93% of the total score of trust in the health care system, and it was at a moderate level. Furthermore, the mean score of COVID-19 preventive behaviors among the participants was about 76.74%, and it was at a moderate level based on the cut-off point suggested by Bloom[1] for health behavior performance [14].

Based on the findings of the present study, a statistically significant relationship was found between the COVID-19 preventive behaviors and all demographic variables. The mean scores of COVID-19 preventive behaviors were higher in women compared to men, in single participants compared to married ones, in those with bachelor's, master's, and doctoral degrees than those with diploma and lower degrees, in government employees and college students compared to housewives, workers, and unemployed participants, in homeowners compared to tenants, and among participants without a history of COVID-19 than those who had been infected before. It was also significantly lower among participants with poor economic status than other economic groups. Based on the findings, there was a significant negative correlation between COVID-19 preventive behaviors with age and household size, so that with increasing age and household size, so that scores of preventive behaviors decreased by aging (Table 3).

_____

[1]According to Bloom's suggested cut-off point, if participants' scores are less than 60% out of 100% of the total performance score, their performance levels are poor, the score of 60-79 percent: moderate performance, and 80-100 percent: good performance [14].

**Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021**        **4**

_Asia Pacific Journal of Health Management  2023; 18(2):i1445.  doi: 10.24083/apjhm.v18i2.1445_

**TABLE 2. MEAN SCORES OF TRUST IN HEALTH CARE SYSTEM AND COVID-19 PREVENTIVE BEHAVIORS AMONG THE PARTICIPANTS**

| Variable | | Mean±SD | Scale range[a] | Min-Max[b] | Mean score (Out of 100) |
|---|---|---|---|---|---|
| Trust in health care system | Patient focus of providers | 18.87±5.04 | 6-30 | 6-30 | 62.92±16.82 |
| | Policies at the macro level will be without consequences for the patient | 17.29±5.09 | 6-30 | 6-30 | 57.65±16.97 |
| | Health care providers' expertise | 12.94±3.45 | 4-20 | 4-20 | 64.71±17.25 |
| | Quality of care | 29.43±6.22 | 9-45 | 9-45 | 65.41±13.82 |
| | Information supply and communication by care providers | 18.64±5.20 | 6-30 | 6-30 | 62.14±17.34 |
| | Quality of cooperation | 6.63±1.93 | 2-10 | 2-10 | 66.38±19.37 |
| | Total | 103.83±20.66 | 33-165 | 35-165 | 62.93±12.52 |
| COVID-19 preventive behaviors | | 49.11±8.88 | 16-64 | 16-64 | 76.74±13.88 |

Abbreviations: SD, standard deviation

a,The lowest and highest values that can be obtained from the original scale.

b,The lowest and highest values obtained in this study.

**TABLE 3: MEAN SCORE OF COVID-19 PREVENTIVE BEHAVIORS ACCORDING TO SELECTED DEMOGRAPHIC VARIABLES OF THE PARTICIPANTS**

| Mean±SD | Variable | | p | Mean±SD | Variable | | p |
|---|---|---|---|---|---|---|---|
| Gender | Male | 48.24±8.80 | 0.038[†] | Employment status | Housewife | 45.26±7.31[ab] | 0.001[‡] |
| | Female | 49.89±8.90 | | | Government employee | 51.16±7.95[acd] | |
| Marital status | Single | 49.87±9.30 | 0.041[†] | | Self-employed | 48.96±8.65 | |
| | Married | 48.25±8.32 | | | Retired | 47.26±5.36 | |
| Educational status | Middle school | 44.14±8.42[abc] | 0.001[‡] | | College student | 51.69±9.65[bef] | |
| | High school | 46.38±9.11[def] | | | Worker | 43.09±6.93[ce] | |
| | Diploma | 47.40±9.58[ghi] | | | Unemployed | 46.22±9.65[df] | |
| | Associate degree | 48.22±8.63 | | Housing situation | Tenant | 47.60±8.18 | 0.013[†] |
| | Bachelor degree | 50.82±8.31[adg] | | | Homeowner | 49.70±9.09 | |

Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021    5

Asia Pacific Journal of Health Management  2023; 18(2):i1445.  doi: 10.24083/apjhm.v18i2.1445

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Master degree | 50.43±7.57[beh] | | History of Covid-19 | Yes | 47.94±8.48 | 0.012† |
| | Doctorate | 51.80±9.64[cfi] | | | No | 49.94±9.08 | |
| Economic status | Low | 45.61±8.44[abc] | 0.047‡ | Age(year) | r (-0.174) | p (0.001)* | |
| | Medium | 49.36±9.07[a] | | Household size | r (-0.096) | p (0.031)* | |
| | Good | 49.73±8.53[b] | | | | | |
| | Excellent | 48.76±9.07[c] | | | | | |

Abbreviations: SD, standard deviation

†, Independent T-test; ‡, One-way ANOVA; *, Pearson correlation

Same alphabet letters demonstrate a statistically significant difference between the two groups based on the Bonferroni correction method.

Based on results of the present study, there was a statistically significant relationship between trust in the health care system with marital status, economic status, employment status, and age so that the mean scores of trust in the health care system were higher among married participants compared to single people, in those with high economic status compared to weak and medium participants, in retirees than college students and the unemployed participants. There was also a significant negative correlation between trust in the health care system and age so that the trust score decreased by aging (Table 4).

Tables 5 and 6 present the regression coefficients of the predictors of COVID-19 preventive behaviors based on dimensions of trust in the health care system. Based on the findings of the tables, adapted regression coefficients, quality of care ($\beta=0.178$, $p<0.003$), patient focus of providers ($\beta=0.140$, $p<0.10$), policies at the macro level will be without consequences for the patient ($\beta=-0.112$, $p<0.027$), and the quality of cooperation between service providers ($\beta=0.106$, $p<0.026$) were respectively the most effective predictors of preventive behaviors among the general public of Urmia so that for one unit increase in scores of quality of care, patient focus of providers, and quality of cooperation between service providers increased the score of COVID-19 preventive behavior by about 0.178, 0.40, and 0.106 points respectively. Furthermore, one unit increase in scores of policies at the macro level will be without consequences for the patient decreased the score of COVID-19 preventive behavior by about 0.112 points (Table 6).

The dimensions of trust in the health care system predicted about 11.5% of the variance of COVID-19 preventive behaviors among the general public of Urmia. According to the classification of the coefficient of determination ($R^2$) by Cohen, it was at the moderate level according to the classification of weak (0.02), moderate (0.13), and strong (0.26) [15] (Table 5).

**TABLE 4: MEAN SCORE OF TRUST IN HEALTH CARE SYSTEM ACCORDING TO SELECTED DEMOGRAPHIC VARIABLES OF THE PARTICIPANTS**

| Mean±SD | Variable | | p | Mean±SD | Variable | | P |
|---|---|---|---|---|---|---|---|
| Gender | Male | 104.76±22.81 | 0.324† | Employment status | Housewife | 103.43±15.00 | 0.031‡ |
| | Female | 103.01±8.56 | | | Government employee | 106.74±21.74 | |
| Marital status | Single | 102.05±20.98 | 0.38† | | Self-employed | 103.68±23.65 | |
| | Married | 105.88±20.14 | | | Retired | 114.36±17.23[ab] | |
| Educational status | Middle school | 103.55±17.57 | 0.701‡ | | College student | 101.21±21.14[a] | |
| | High school | 104.16±18.07 | | | Worker | 102.23±15.99 | |
| | Diploma | 101.18±18.55 | | | Unemployed | 100.04±18.39[b] | |
| | Associate degree | 106.85±19.06 | | Housing situation | Tenant | 105.03±17.77 | 0.378† |

Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021        6

*Asia Pacific Journal of Health Management 2023; 18(2):i1445. doi: 10.24083/apjhm.v18i2.1445*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Bachelor degree | 103.18±22.65 | | | Homeowner | 103.37±21.69 | | |
| | Master degree | 106.17±20.18 | | History of Covid-19 | Yes | 104.99±20.07 | | 0.291† |
| | Doctorate | 103.62±24.54 | | | No | 103.02±21.07 | | |
| Economic status | Low | 97.20±16.67ab | 0.001‡ | Age(year) | r (-0.157) | | P (0.001)* | |
| | Medium | 101.15±21.26cd | | | | | | |
| | Good | 107.15±18.30ac | | Household size | r (0.078) | | P (0.079)* | |
| | Excellent | 114.63±24.74bd | | | | | | |

Abbreviations: SD, standard deviation

†, Independent T-test; ‡, One-way ANOVA; *, Pearson correlation

Same alphabet letters demonstrate a statistically significant difference between the two groups based on the Bonferroni correction method

**TABLE 5. PREDICTORS OF COVID-19 PREVENTIVE BEHAVIORS AMONG THE PARTICIPANTS ACCORDING TO THE DIMENSIONS OF TRUST IN HEALTH CARE SYSTEM**

| Dimensions of trust in health care system | Unstandardized coefficients | | Standardized coefficients | t | p | $R^2$ |
|---|---|---|---|---|---|---|
| | B | SE | β | | | |
| Patient focus of providers | 0.357 | 0.096 | 0.203 | 3.711 | 0.001 | 0.115 |
| Policies at the macro level will be without consequences for the patient | -0.297 | 0.090 | -0.170 | -3.312 | 0.001 | |
| Health care providers' expertise | 0.004 | 0.145 | 0.002 | 0.031 | 0.975 | |
| Quality of care | 0.335 | 0.086 | 0.234 | 3.900 | 0.001 | |
| Information supply and communication by care providers | -0.093 | 0.104 | -0.054 | -0.889 | 0.374 | |
| Quality of cooperation | 0.362 | 0.227 | 0.079 | 1.597 | 0.111 | |

**TABLE 6. PREDICTORS OF COVID-19 PREVENTIVE BEHAVIORS* AMONG THE PARTICIPANTS ACCORDING TO THE DIMENSIONS OF TRUST IN HEALTH CARE SYSTEM**

| Dimensions of trust in health care system | Unstandardized coefficients | | Standardized coefficients | t | p | $R^2$ |
|---|---|---|---|---|---|---|
| | B | SE | β | | | |
| Patient focus of providers | 0.246 | 0.096 | 0.140 | 20574 | 0.010 | 0.196 |
| Policies at the macro level will be without consequences for the patient | -0.195 | 0.088 | -0.112 | -2.218 | 0.027 | |
| Health care providers' expertise | 0.053 | 0.141 | 0.021 | 0.379 | 0.705 | |
| Quality of care | 0.254 | 0.084 | 0.178 | 3.015 | 0.003 | |
| Information supply and communication by care providers | -0.021 | 0.101 | -0.013 | -0.211 | 0.833 | |
| Quality of cooperation | 0.488 | 0.219 | 0.106 | 2-227 | 0.026 | |

* Adjusted variables: age, gender, marital status, educational status, employment status, economic status, history of Covid-19, and household size

*Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021*    **7**

*Asia Pacific Journal of Health Management 2023; 18(2):i1445. doi: 10.24083/apjhm.v18i2.1445*

## DISCUSSION

According to the research results, the people in Urmia were slightly above average in terms of trust in the health care system and also in terms of adherence to COVID-19 preventive behaviors. Consistent with the results of the present study, the majority of people in Shiraz were at a moderate level in terms of trust in the health care system in a study by Movahed et al. [9]. In a study by Molavi Vardanjani et al. in 15 provinces of Iran [16], public trust in the health care system was low during the outbreak of COVID-19 in Iran. In Molavi Vardanjani et al.'s study, the reason for the low level of public trust in the health system compared to other studies is attributed to the Covid-19 crisis. Because the Molavi Vardanjani et al.'s study was conducted during the Covid-19, while the studies that were used to compare their findings were not conducted during a public health crisis. A study in China indicated that only about 28% of Chinese had full trust in their health care system [17], and in a study conducted during the covid-19 pandemic among the health care workers of Pakistan, the findings showed that 50% of the participants did not trust the health care system [18]. Also, studies in various countries also indicated that public trust in national health care systems was decreasing [16].

According to the above-mentioned comparisons, people in Urmia were at a higher level of trust in the health care system than the national average and compared to the findings of other studies but given the importance of trust in the health care system, efforts should be made to increase it among the general public.

Given the positive and direct correlation between trust in the government and the health care system, the Iran Ministry of Health and Medical Education must seriously lobby to strengthen the general increase in the health care system and receive support from all levels of

government.16 In the current status of the COVID-19 epidemic, rumors and misinformation spread by individuals, groups, or other countries with political-economic purposes are the main reasons for the decline in public trust in the health care system; hence, policymakers must carefully examine the quality of information published from various sources (especially social networks). They should also use different and reliable sources of information when immediate health information is spread to ensure that

different populations have access to this information timely, and thus prevent the spread of misinformation [16, 19].

In critical situations, it is necessary to communicate clearly and honestly with people and clarify the reasons for the decisions made about the crisis, establish two-way communication, and listen to the public voice to help increase public trust in the health care system [16].

Different statistics have been reported in different studies on the degree of adherence to COVID-19 preventive behaviors among the general public. For example, in a study by Abbasi Kanguri et al. [20], Tavassoli et al. [21], and Baghernejad Hesari [22], participants were respectively scored about 86.20, 63.12, and 65.96 out of 100 for COVID-19 preventive behaviors. Given that the adoption of preventive behaviors is the main way to control and prevent COVID-19, there is a need to design and implement a variety of interventions, especially health education interventions to improve this index regardless of the individuals' levels of adherence to these behaviors.

Based on the findings of the present study, the quality of care was the strongest predictor of COVID-19 preventive behaviors, and the adherence to COVID-19 preventive behaviors increased among people of Urmia by increasing their trust in the quality of cares provided by the health system. Consistent with the present study, Amuta-Jimenez et al. found that trust in the quality of cares provided by the health care system was a positive and significant predictor of routine medical screenings [23]. Therefore, it is suggested to integrate strategies related to the improvement of quality of services in all interventions that are designed and implemented to increase public trust in the health care system and promote COVID-19 preventive behaviors. These strategies include providing correct and up-to-date hygienic instructions of COVID-19, teaching the correct method of performing COVID-19 preventive behaviors, providing timely services for the prevention and control of COVID-19, and observing existing standards in the field of prevention and control of COVID-19 [10].

Patient focus of providers was another predictor of COVID-19 preventive behaviors. The individuals' adherence to COVID-19 preventive behaviors increased by enhancing their trust and belief that the care provided by the health care system was patient-centered. In patient-centered care, patients (care recipients) are more involved in decisions about the care they receive. Consistent with the

present findings, Kahn et al. found that patient-centered care was a positive and significant predictor of adherence to treatment among patients with breast cancer [24]. Treatment adherence was lower in patients who received less support from service providers and were less involved in their treatment decisions and were less informed about side effects of medications. It can be expected that increasing public participation in decisions and policies about the prevention and control of COVID-19 will increase the adherence to COVID-19 preventive behaviors.

Based on the findings of the present study, policies at the macro level will be without consequences for the patient were negative and significant predictors of COVID-19 preventive behaviors. Increasing the participants' trust in macro-level health policies decreased their adherence to COVID-19 preventive behaviors. A possible reason for this finding is that higher trust in macro-level policies to control COVID-19 (including quarantine of infected patients, disease detection, punishment for violation of the COVID-19 rules, and closure of schools and universities), leads to a misconception that the implementation of these policies by the government and the health care system is enough to control the disease, and there is no need to observe individual behaviors such as wearing masks, observing social distance, and regular hand washing.

Therefore, it is suggested to use strategies and methods in health education to correct misconceptions and attitudes towards control and prevention of COVID-19 in designing and implementing interventions about the promotion of COVID-19 preventive behaviors among the general public. These strategies include holding group discussions and resolving existing misunderstandings in this field [25].

The quality of cooperation between service providers was another predictor of COVID-19 preventive behaviors, and thus the adherence to COVID-19 preventive behaviors increased among people by increasing their belief and trust in good cooperation and coordination of health care service providers. Cooperation and coordination among health care service providers are essential to provide high-quality services [26], and as mentioned in previous discussions, high-quality services can increase public trust in the health care system, leading to adherence to health orders [23,27].

Therefore, cooperation and coordination between service providers working in the field of COVID-19 control and prevention are essential to promote COVID-19 preventive behaviors among the general public (an example of coordination is that conflicting information is not available to the public) [10].

Consistent with the findings of the present study, Chan et al. studied those who had higher trust in the health care system and found that they had a higher resilience to adherence to COVID-19 preventive behaviors, including preventive behavior of staying at home [4]. Furthermore, Wong et al. conducted a study in Hubei province of China and found that people with higher trust in the information published about COVID-19 (such as definitively diagnosed, deaths, etc.), and preventive instructions (including quarantine) provided by local, provincial, and central governments also had higher adherence to preventive behaviors and searched for treatment during the COVID-19 epidemic [5].

Due to the lack of studies on the current subject, the present study can be a basis for future studies, especially intervention studies that will be designed and implemented to promote COVID-19 preventive behaviors in the general public. A limitation of the present study was that the data were collected by the self-reported method and there was the possibility of unreal answers from the participants. Due to the cross-sectional nature of the study, the relationships between the variables did not necessarily indicate a causal relationship.

## CONCLUSION

Based on the research results, four dimensions of trust in the health care system, including quality of care, patient focus of providers, policies at the macro level will be without consequences for the patient, and the quality of cooperation between service providers, were the most effective predictors of COVID-19 preventive behaviors among the general public of Urmia.

In order to promote adherence to COVID-19 preventive behaviors among the general public, it is suggested to improve the quality of care provided for the prevention and control of COVID-19 in the society; provide customer-centered cares relating to prevention and control of COVID-19; attract public trust to the macro level policies relating to prevention and control of COVID-19; and create cooperation and coordination among services providers working in the field of prevention and control of COVID-19.

## CONFLICT OF INTEREST:

The authors declare no conflict of interest.

## ETHICAL CONSIDERATION:

The ethical approval for the study was obtained from the Research Ethics Committee of the Vice-Chancellor of Research and Technology of Urmia University of Medical Sciences (IR.UMSU.REC.1400.202).

## References

1. Tajeri Moghadam M, Zobeidi T, Yazdan Panah M. Analysis of preventive behaviors against corona virus Case: Rural areas of Dashtestan city. Space Economics and Rural Development. 2020; 9(33):1-24. (In Persian)

2. Chan EY, Shahzada TS, Sham TS, Dubois C, Huang Z, Liu S, et al. Narrative review of non-pharmaceutical behavioural measures for the prevention of COVID-19 (SARS-CoV-2) based on the Health-EDRM framework. British Medical Bulletin. 2020; 136(1):46-87.

3. Raude J, Lecrique JM, Lasbeur L, Leon C, Guignard R, Roscoät ED, et al. Determinants of preventive behaviors in response to the COVID-19 pandemic in France: comparing the sociocultural, psychosocial and social cognitive explanations. Frontiers in Psychology. 2020;11:1-15.

4. Chan HF, Brumpton M, Macintyre A, Arapoc J, Savage DA, Skali A, et al. How confidence in health care systems affects mobility and compliance during the COVID-19 pandemic. PloS one. 2020;15(10):1-18.

5. Wong LP, hong Wu Q, Chen X, Chen Z, Alias H, Shen M, et al. The role of institutional trust in preventive and treatment-seeking behaviors during the 2019 novel coronavirus (2019-nCoV) outbreak among residents in Hubei, China. medRxiv. 2020.

6. Movahed M, Shahiri M, Asadi Sarvestani K. The Relationship of Self-Rated Health with Perceived Social Support and Trust in Health Care System in Residents of Shiraz City. Journal of Health Based Research 2018; 4(2): 207-18. (in Persian)

7. Kreps SE, Kriner DL. Model uncertainty, political contestation, and public trust in science: Evidence from the COVID-19 pandemic. Science advances. 2020;6(43):1-12.

8. Galea S, Merchant RM, Lurie N. The mental health consequences of COVID-19 and physical distancing: the need for prevention and early intervention. JAMA internal medicine. 2020; 180(6):817-818.

9. Movahed M, Shahiri M, Asadi Sarvestani K. The Relationship of Self-Rated Health with Perceived Social Support and Trust in Health Care System in Residents of Shiraz City. Journal of Health Based Research 2018; 4(2): 207-18. (In Persian)

10. Straten GF, Friele RD, Groenewegen PP. Public trust in Dutch health care. Social science & medicine. 2002;55(2):227-234.

11. Ebrahimipour H, Askarzade E. Validity and Reliability of Measurement Tool of Public Trust of Health Care Providers. Journal of Paramedical Sciences & Rehabilitation. 2020;9(1):81-90.

12. Vakili MM, Jahangiri N. Content validity and reliability of the measurement tools in educational, behavioral, and health sciences research. Journal of Medical Education Development. 2018;10(28):106-18.

13. Mohammadbeigi A, Mohammadsalehi N, Aligol M. Validity and Reliability of the Instruments and Types of Measurment in Health Applied Researches. J RafsanjanUniv Med Sci 2015; 13(10): 1153-1170.( In Persian)

14. Ali A, Angelene PS. Self-reported association and determinants of KAP on food safety and hygiene among Private University Students in Kedah state, Malaysia. MOJ Bioequiv Availab 2018;5(5):256-262

15. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Hillsdale, New Jersey: Lawrence Erlbaum Associates; 1988.

16. Bagheri-Lankarani K, Imanieh MH, Hassani AH, Molavi Vardanjani H. Public Trust in Healthcare System in Iran: A Rapid Assessment During the COVID-19 Epidemic in Iran. Epidemiology and Health System Journal. 2021;8(4):146-151.

17. Zhao D, Zhao H, Cleary PD: Understanding the determinants of public trust in the health care system in China: an analysis of a cross-sectional survey. Journal of health services research & policy. 2019; 24(1):37-43.

18. Malik AA, Awan S, Rana AT, Malik J, Ishaq U, Zahoor M, Zaidi SM. Level of Trust in Health Care Systems During COVID-19 Pandemic Among Health Care Workers of

*Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021* **10**

*Asia Pacific Journal of Health Management 2023; 18(2):i1445. doi: 10.24083/apjhm.v18i2.1445*

Pakistan. Journal of Community Hospital Internal Medicine Perspectives. 2022;12(5):65-70.

19. Fridman I, Lucas N, Henke D, Zigler CK. Association between public knowledge about COVID-19, trust in information sources, and adherence to social distancing: Cross-sectional survey. JMIR public health and surveillance. 2020;6 (3):1-17.

20. Abbasi-Kangevari M, Kolahi AA, Ghamari SH, Hassanian-Moghaddam H. Public Knowledge, Attitudes, and Practices Related to COVID-19 in Iran: Questionnaire Study. JMIR Public Health and Surveillance. 2021;7(2):1-14.

21. Tavassoli E, Hesary FB. Knowledge, skill, and preventive behaviors regarding COVID-19 among the public in Shahrekord of Iran. Journal of Education and Health Promotion. 2021;10(1):1-6.

22. Baghernezhad Hesary F, Salehiniya H, Miri M, Moodi M. Investigating Preventive Behaviors Toward COVID-19 Among Iranian People. Frontiers in Public Health. 2021;9:1-6.

23. Amuta-Jimenez AO, Ogunyankin F, Lo C. Understanding the interconnection between routine screening behavior, socio-demographics, quality of care, trust, and communication experiences with health-care professionals. Cogent Social Sciences. 2018;4(1):1-11.

24. Kahn KL, Schneider EC, Malin JL, Adams JL, Epstein AM. Patient centered experiences in breast cancer: predicting long-term adherence to tamoxifen use. Medical care. 2007;45(4)::431-439.

25. Sharma M. Theoretical foundations of health education and health promotion.3th ed. Jones & Bartlett Learning; 2021.

26. Mosadeghrad AM. Factors affecting medical service quality. Iranian journal of public health. 2014;43(2):210-220.

27. Graham JL, Shahani L, Grimes RM, Hartman C, Giordano TP. The influence of trust in physicians and trust in the healthcare system on linkage, retention, and adherence to HIV care. AIDS patient care and STDs. 2015;29(12):661-667.

**Relationship Between the Trust in a Health Care System and Adherence to COVID-19 Preventive Behaviors Among The General Population in 2021**    **11**

*Asia Pacific Journal of Health Management 2023; 18(2):i1445. doi: 10.24083/apjhm.v18i2.1445*