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Public Preferences and Willingness to Pay for Social Health Insurance in Iran: A Discrete Choice Experiment

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A B S T R A C T

Background: Current health insurance programs in Iran suffer from low enrolment and are not sufficient to attain the country to universal health coverage (UHC). The study hypothesized that improving the enrollment rate and moving towards more sustainable UHC can be achieved by improving the benefit package and providing new incentives. The objective of this study is to assess public preferences and willingness to pay (WTP) for social health insurance (SHI) in Iran.

Methods: A discrete choice experiment (DCE) was conducted in 2022, using a self-administered questionnaire on 500 participants to estimate WTP and determine individual's preferences for the SHI plan. Respondents were presented with an eight choice set, and asked to select their preferred one. In each choice set, scenarios were described by eight attributes with varying levels. The conditional logit regression model was used to analyze the participants preferences. WTP for each attribute was also calculated by $STATA_{13}$.

Results: Most of the included attributes were significant predictors of health insurance package selection. The maximum coverage of hospitalization costs in the private sector, ancillary services such as glasses, canes etc., as well as coverage for hospitalization costs in the public sector and drug costs, were the most important determining factors for this choice. Coverage of preventive dental care did not significantly affect respondent choices. Estimating WTP showed that individuals are willing to pay more for higher financial protection, particularly against private sector costs; the WTP to increase the coverage of hospitalization costs in the private sector from 50% to 90% is estimated at 362,068 IR, Rials per month.

Conclusion: This study identifies the key factors that the population value with regard to health insurance and the tradeoffs they are willing to make between them. Hospitalization, drugs and ancillary services were the most important determining factors for their choice. The data suggests that additional resources coming into the Iranian health system might best be prioritized to covering hospitalization and drug costs and those associated with ancillary services.

Keywords: Social Health Insurance, Discrete Choice Experiment, Preferences, Willingness to Pay

Introduction

Currently, three main health insurance organizations provide basic health insurance coverage for the Iranian population. First, governmental employees; self-employed; rural

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residents; and other sectors including poor families, students, people with disabilities, families with injured people during the war, and some professional associations are covered by the Iran Health Insurance Organization (IHIO). Second, the Social Security Organization (SSO) is a non-governmental organization which covers other workers apart from armed forces which are covered by the third separate funding stream named the Armed Forces Medical Services Insurance Organization (1-3).

Over the last decades, several reforms were implemented in the health insurance system of Iran aiming to enhance universal health coverage (UHC) in terms of population coverage, covering more health care services and providing higher financial support against health care expenditures. However, these reforms have so far failed to achieve UHC. There are still difficulties in achieving a sustainable health insurance coverage for the entire population. For instance, despite implementing Transformation Health Plan in 2014 in Iran and providing free health insurance coverage for the uninsured, the 2016 census showed that 10.3% of the population was still without coverage. Studies have shown that there are inequalities in health financing indicators and access to health care services, particularly for low-income groups and rural dwellers (3, 4). This made policy makers and law makers to make health insurance coverage mandatory in the sixth national development plan (4).

There are several main obstacles which hinder achieving UHC in Iran. They include no reliable policies have been devised to implement mandatory insurance coverage, a large part of population work in the informal sector of economy (about 20%), and the unstable financial status of the country due to international sanctions reducing the ability of both government and people to provide more financial support for the poor and to pay premiums, respectively. Another problem facing UHC in Iran is the cost associated with covering about 23 million rural citizens and the self-employed free of charge, while a part of this population could afford to pay premiums. To limit free health insurance coverage just for people in need and to make UHC in Iran financially more sustainable, a means test project was launched by the IHIO in November 2019 to levy premiums based on affordability for the self-employed and rural citizens. But there are still challenges to precisely identify the right people entitled for free health insurance coverage; hence, policy makers are trying to devise a reliable method to separate the real poor from the rest of the population and set premiums for those who can contribute (4).

Studies have shown that the basic benefit package in Iran is still mostly as a result of negotiations and politics among stakeholders; hence, the revisions are basically temporal and non-systematic (5). Basic health insurance organizations do not have enough financial resources; hence, there are various important and expensive but necessary health care services which are not included in the benefit package. For instance, private medical tariffs are much higher than the public medical tariffs and basic health insurance schemes (mainly IHIO and SSO beneficiaries) cover just the public tariffs. This forces people (without supplementary health insurance) to fill the considerable difference between private and public medical tariffs out of their pocket when they get their health services from private health sector especially for outpatient services. This is one of the main contributors of out-of-pocket health expenditures in Iran (4).

Few studies have investigated the preferences of population in Iran closely or the tradeoffs that they are willing to make with regard to their coverage to add insight into setting the basic benefit package (6). Studies of community-based health insurance in other low- and middle-income countries have demonstrated that among other issues, two key problems that need to be addressed to increase the rate of enrollment among people are the quality of health care services and benefit package. To address these two problems, we need to know how to best design benefit packages considering the preferences of people, the tradeoffs they are willing to make between package features and how much they want and can afford to pay for it (7). Knowing what

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people prefer or need to be provided by health insurance and their willingness to pay (WTP) can help policy makers to improve health insurance coverage for uninsured groups such as self-employed and rural residents in Iran and maximize the value of the benefit package in a way to address the preferences of the current insured groups.

Estimation of WTP can help decision makers get an indication of the value that the target population place on different components of coverage, to set the premiums more precisely according to these values and compare the amount of premiums people state that they will pay and the amount of premiums set by policy makers in the real world and to know whether the WTP covers the health expenditures or not. If not, the estimated WTP can help government to predict how much subsidies are needed to extend coverage for poor people and fill the gap between WTP and real expenditures (8).

There are two main approaches for estimating WTP including revealed preference, which refers to real behaviors of people in real world situations, and stated preference (SP), where people state their preferences over hypothetical policy alternatives (9). While RP is generally considered more accurate, in cases studying a potential policy improvement, SP has advantages in that it allows investigators to examine the value of programs to target populations before they are implemented and obtain valuations for sub-components of programs without the need for expensive trialing of different policy designs. One such method increasingly used by health economic researchers to estimate WTP is discrete choice experiments (DCEs). DCEs ask respondents to choose between two or more hypothetical policies or health products that differ from each other based on a set of defined attributes, which can include pecuniary or non-pecuniary components. In DCEs, attributes are represented by two or more levels, defined for each attribute, which are presented to respondents who are asked to make a series of choices between hypothetical options. This helps designers to create different possible versions of policy or product for people to choose among them (10). This allows DCEs to measure the value that target populations attach to policy interventions as a whole as well as specific attributes and levels of a given policy (11). DCEs studies have been used to quantify individual preferences and WTP for micro health insurance in Liberia and Malawi and social health insurance (SHI) in Ethiopia (7). In these countries, the improvements have been mainly limited to development of benefit packages, for instance whether the benefit package is affordable and if it meets the preferences of the poor. Facing similar challenges in the existing health insurance problems in Iran, we believe that improving the enrollment rate and moving towards more sustainable UHC can be facilitated by improving the benefit package and considering potential new incentives created by policy changes. To test the hypotheses, we used a DCE to elicit the SHI preferences over potential policy options, as well as WTP, of a cohort of adult Iranians.

Materials and Methods

The stated preference technique of a DCE was used to estimate WTP and determine individual's preferences for the SHI.

Development of the DCE

DCE is a stated preference quantitative technique, originating as a mathematical psychology method, which is designed to eliciting individuals' preferences for alternative multi-attribute commodities and services (12). In this technique, respondents are presented with hypothetical choices between two or more alternatives that are described by a common set of attributes. Respondents are asked to complete a series of such choices that comprise different levels of these attributes. It is assumed that respondents select the alternative with the highest utility by considering all information provided (13, 14).

This study involved six stages to develop the DCE:

Identification of Attributes and Levels

Attributes are typically derived through various methods such as literature review, focus group discussion, individual interviews, review of

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documents and policies, pilot studies, and experts' opinions (13-15).

In this study, first, an initial list of twenty-eight attributes were extracted by reviewing relevant literatures in the area of health financing, health insurance policies, social policies and benefit packages in Iran. Then, we modified the initial list based on previous study conducted in Iran in 2019 (16). Finally, eight attributes were selected by a focus group discussions (FGD) consisting of experts from the field of health economics, health insurance, social medicine, social security, health policy, and healthcare management.

The levels of relevant attributes were also chosen via the FGD and consensus development approach based on previous studies (6, 13, 16) and research team opinions (Table 1).

Table 1. Description of attributes and levels

Attributes	Levels
Hospitalization costs in the public sector	70% coverage 80% coverage 90% coverage
Hospitalization costs in the private sector	50% coverage 70% coverage 90% coverage
Outpatient costs	50% coverage 70% coverage 90% coverage
Drug costs	70% coverage 80% coverage 90% coverage
Dental care	No coverage Only preventive care
Ancillary services cost such as ambulance, glasses, crutches and counseling and psychiatry and other things	50% coverage 70% coverage No coverage
Paraclinical costs	50% coverage 70% coverage 90% coverage
Monthly premium (IR. Rials)*	300000 400000 500000

*1 US dollar = 235000 Rial in 2021, June/ July

Experimental Design

Experimental design is the process of systematically manipulating the attribute levels to create a set of scenarios that will yield as much statistical information as possible to estimate the parameters of the underlying preference model (17). The number of possible choices in the DCE is obtained from the following:

$N = L^A$

N = The number of scenarios

A = The number of attributes

L = The number of attribute levels

Since the number of choices obtained in the full factorial design is generally large, researchers use the fractional factorial design such as "orthogonal design" to calculate the optimal number of choice set. The orthogonal design guarantees that there is no linear dependence between independent variables and allow independent estimation of interactions between variables (18, 19).

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In this study, there were seven attributes with three levels and one attribute with two levels. The total number of scenarios for these eight attributes and their levels is 4374 ($3^7 * 2^1 = 4374$).

An orthogonal design was used to design the choice sets and the most efficient attributes were selected to be included in the final experimental design. The experimental design of the choice set was performed using SPSS version$_{22}$. The final design contained 24 choice sets divided into 3 blocks such that each respondent was asked to complete eight choice sets which consisted of plans A and B (with no opt-out). The DCE was conducted in Persian; however, an example choice set translated into English is presented in Table 2.

Table 2. Example choice set

Attributes	Insurance A	Insurance B
Hospitalization costs in the public sector	70% coverage	80% coverage
Hospitalization costs in the private sector	90% coverage	50% coverage
Outpatient costs	50% coverage	90% coverage
Drug costs	90% coverage	70% coverage
Dental care	Only preventive care	No coverage
Ancillary services cost such as ambulance, glasses, crutches and counseling and psychiatry and other things	70% coverage	No coverage
Paraclinical costs	90% coverage	70% coverage
Monthly premium per person	400000 Rials	300000 Rials
Which of the health insurance plans would you prefer (Please tick one box only)?	Plan A ☐	Plan B ☐

Questionnaire design

A self-administered questionnaire with 3 blocks of eight-choice sets (we developed 3 versions of the questionnaire that were different only in the choice sets) and characteristics of respondents (gender, age, marital status, household size, salary level, work position, and health insurance history) was designed. Considering that Persian is the formal national language in Iran, the questionnaire was developed in Persian. In a pilot study (30 individual), 2 holdout (dominant) choice sets were added to each block, where one scenario was logically superior to the opposite scenario. This was used to assess the understanding of respondents, all respondents who carefully responded to the questionnaire were expected to choose the dominant option; thus, those who did not respond correctly to the dominant option were excluded from the study. Therefore, the pilot resulted in theoretically valid estimates as shown by the sign of coefficients and therefore no changes were made to the main survey.

Sample size and data collection

There is no agreement on the correct sample size required for a DCE (12). Determining the sample size of the studies is complex and researchers commonly apply rules of thumb (17, 20). Some suggest the sample size should be greater than 150 and then flattens out at around 300 (12, 20). Some suggest at least 30 participants for each subgroup such as age, gender, etc. Others recommend a threshold of 1000, and yet other researchers suggested a minimum of 500 to ensure the precision of the findings (21). In this study with consideration a threshold of 1000, the sample size was calculated 500 participants.

Data were collected from 21 June to 22 July 2022. The target population included all individuals who referred to the health insurance agencies to register for the SHI plan, from which 500 respondents were randomly selected and after obtaining informed consent, they were given a paper-based questionnaire to fill. On average, 15 to 17

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questionnaires were answered every day, it took about one month to complete and collect all the questionnaires. Respondents who answered the dominant question incorrectly, completed the questionnaire incompletely, or refused to continue completing the questionnaire for any reason were excluded from the final analysis.

Data analysis

Having collected information on individual preferences, the next stage is to analyze responses. The random utility theory was the basis for the analysis of the DCE data. Aa person should choose between 2 alternatives A or B, and chose A. This indicates that alternative A provides more utility to the person than alternative B, and can be mathematically expressed as follows:

$$U(A, C) > U(B, C) \quad (1)$$

Where U is the utility derived from each alternative A and B, and C is a personal attribute which becomes effective upon choosing the alternative. Since C is a common element on both sides of Equation 1, Equation 1 can be expressed as follows:

$$V(A\text{-}B) = U(A, C) - U(B, C) \quad (2)$$

Where V is indirect utility obtained from the alternative A compared with alternative B. The fitted utility function is expressed using a linear equation as follows:

$$V=\beta_1 \text{ hospub} + \beta_2 \text{ hospri} + \beta_3 \text{ Outpc} + \beta_4 \text{ drugc} + \beta_5 \text{ dentc} + \beta_6 \text{ addic} + \beta_7 \text{ parac} + \beta_8 \text{ Prem} + \varepsilon \quad (3)$$

Where β_1 to β_8 are the coefficients of the health insurance packages, and the attributes: hospub (Hospitalization costs in the public sector), hospri (Hospitalization costs in the private sector), Outpc (Outpatient costs), drugc (Drug costs), dentc (Dental care), ancic (Ancillary services cost coverage), parac (paraclinical costs), and Prem (Monthly premium) are included in the analysis, and Ɛ is the error term. If the error terms have Logistic distribution, we applied the conditional logit regression model to analyze the data. This model assumes that the choices made are independent of irrelevant alternatives (IIA) which may be restrictive. Meanwhile, it is more useful to estimate the utility obtained from an attribute than using more complicated models such as the nested logit and mixed logit models (21). The positive (negative) β coefficient shows an individual's utility (disutility) from the use of the chosen attribute. The McFadden R_2 and χ^2 tests were used to examine the goodness of fit of the models.

Willingness to pay

Marginal WTP represents respondents' average monetary valuation of a one-unit change of attribute levels and therefore shows how much respondents are willing to pay for the level under consideration rather than the reference level (13, 15). Hence, if the price attribute coefficient was b and the coefficient of levels of one of the studied attributes was b_1, the WTP would be obtained through the following relationship:

$$WTP = -b_1/b. \quad (4)$$

All analysis were performed using STATA software version 13.

Results

Characteristics of respondents

In this study, 490 individuals completed the questionnaires. No individuals selected the dominated alternative in the example question, so all respondents who completed the questionnaire were included in the experiment. Ten individuals did not answer all questions, so they were excluded from the analysis. The age of respondents was in the range of 20–70, and most of them (70%) were under 40 years old. The descriptive characteristics of responders are summarized in Table 3.

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Table 3. Descriptive characteristics of respondents

Variable		Frequency	Percentage
Sex	Male	361	72.20
	Female	129	27.80
Educational status	Nonacademic education	185	37.80
	Academic education	305	62.20
Employment status	Employed	356	72.65
	Housewife	37	7.55
	Other	97	19.80
Monthly income (IR. Rials)	< 20000000	328	66.90
	20000000 - 40000000	144	29.40
	> 40000000	18	3.70

Estimating preferences

The results of the conditional logit regression model are shown in Table 4.

Coefficients (β) show individuals' preferences for a choice, and the higher the coefficient, the greater individuals' preferences for that choice. A negative coefficient indicates a negative preference for the attribute levels (choices), and a positive sign of the coefficient indicates a positive preference for the choices.

The results showed that the coefficients of all attributes were significant (70%) except "preventive dental care" and "coverage of outpatient costs".

The maximum coverage of hospitalization costs in the private sector (90% coverage), the maximum coverage (70%) of the costs related to glasses, canes, and other ancillary services (70% coverage), as well as the maximum coverage of hospitalization costs in the public sector (90% coverage), were respectively the most important in choosing a health insurance package.

On the other hand, the odds ratio of "90% coverage of hospitalization costs in the private sector" was 2.317, which shows that the chance of choosing a health insurance package with the maximum coverage of hospitalization costs in the private sector is more than 2 times compared to its "50% coverage". As expected, an increase in insurance premiums was associated with a decrease in the probability of choosing a health insurance package (negative coefficient); Therefore, the individuals preferred to give a lower proportion of their salaries to the health insurance plan.

Willingness to Pay

Estimating WTP showed that individuals are willing to pay more for higher financial protection, particularly against private sector costs, so the WTP to increase the coverage of hospitalization costs in the private sector from 50% to 90% is estimated at 362,068 Rials per month.

Also, there was a great WTP for maximum coverage (70%) of the costs related to glasses, canes, and other ancillary services (262500 IR. Rials per month) and hospitalization costs in the public sector (250000 IR. Rials per month). In contrast, the WTP for outpatient services, especially at the coverage level of 70%, was the lowest (11206 IR. Rials per month).

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Table 4. Conditional logit regression model results

Attribute / Level	Coefficient (*β*)	SE	Odd ratio (OR)	P-value
Hospitalization costs in the public sector (70%)				
80% coverage	0.147	0.059	1.159	0.01
90% coverage	0.580	0.061	1.786	0.00
Hospitalization costs in the private sector (50%)				
70% coverage	0.490	0.058	1.633	0.00
90% coverage	0.840	0.058	2.317	0.00
Outpatient costs (50%)				
70% coverage	0.026	0.058	1.026	0.65
90% coverage	0.400	0.062	1.492	0.00
Drug costs (70%)				
80% coverage	0.523	0.066	1.688	0.00
90% coverage	0.526	0.058	1.693	0.00
Dental care (No coverage)				
Only preventive care	-0.0304	0.056	0.970	0.59
Ancillary services cost (No coverage)				
50% coverage	0.412	0.059	1.511	0.00
70% coverage	0.609	0.061	1.839	0.00
Paraclinical costs (50%)				
70% coverage	0.305	0.063	1.357	0.00
90% coverage	0.271	0.069	1.312	0.00
Monthly premium (per 10 000 IR. Rials)	-0.232	0.033	0.792	0.00
Number of observations = 6542				
Prob > chi-square = 0.0000				
Log-likelihood = − 1916.55				
Pseudo R2 = 0.1547				

Table 5. WTP for health insurance levels

Attribute / Level	WTP (per month)	
	IR. Rials	USS. Dollar
Hospitalization costs in the public sector (70%)		
80% coverage	63362	0.27
90% coverage	250000	1.06
Hospitalization costs in the private sector (50%)		
70% coverage	211206	0.899
90% coverage	362068	1.54
Outpatient costs (50%)		
70% coverage	11206	0.04
90% coverage	172413	0.73
Drug costs (70%)		
80% coverage	225431	0.96
90% coverage	226724	0.96
Dental care (No coverage)		
Only preventive care	13103	0.06
Ancillary services cost (No coverage)		
50% coverage	177586	0.76
70% coverage	262500	1.12
Paraclinical costs (50%)		
70% coverage	131465	0.56
90% coverage	116810	0.50

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Discussion

To our knowledge, this is one of the few studies that has used a DCE to elicit individual's preferences over potential features of SHI policies in Iran.

Our findings indicate that most attributes included were significant in influencing the choices of respondents of a health insurance package. However, the maximum coverage of hospitalization costs in the private sector, ancillary services such as glasses, canes, and etc., as well as hospitalization costs in the public sector and drug cost, were the most important determining factor for this choice, while the cost coverage of preventive dental care was less important. Also, it is very clear that individuals tend to get most services with the lowest monthly premium. These results are valuable for policy makers and health insurance specialists as they present empirical evidence to indicate what basic features should be considered to designing SHI packages from the perspectives of individuals. Also, in the context of limited funding, these results can help inform what services can be included to maximize value for the population.

The result of DCE show that the highest utility was related to "maximum coverage of hospitalization costs in the private sector." This may be due to the better quality of services in the private sector. In Iran, the private and public sectors provide the second and third levels of health services (22). However, the private sector plays an important role in providing outpatient services. Historically, the common perception of Iranians is that the quality of inpatient services in the private sector is far higher than in the public sector (16). One of the weaknesses of health insurance coverage in Iran is the lack of coverage for the difference between private and public sector tariffs, meaning that patients generally face higher out-of-pocket costs when receiving care in the private sector. On the other hand, the costs of medical services in the private sector are also high, which increases the possibility of catastrophic health expenditure (23). This causes people to expect maximum coverage of private sector costs from health insurance plans for more financial protection and to deal with catastrophic health expenditure. Previous studies have also reported a tendency to cover maximum inpatient services in the private sector (13).

The results also showed the significant influence of "covering the costs of ancillary services such as glasses, canes and other medical supplies and equipment", "covering the maximum costs of hospitalization in government hospitals" and also "increasing the coverage of drug costs" in the selection of health insurance packages by customers, highlighting their importance to the population.

It seems that the non-coverage of ancillary costs such as canes and glasses, etc., as well as the adherence of health insurance to the basic prices (reference pricing), the continuous increase in the price of medical equipment, and the non-updating of them in basic health insurance package, has led to the imposition of high costs for patients. Evidence also shows that drug costs are one of Iran's main causes of catastrophic health expenditure (24, 25). Although we expected "coverage of preventive dental care" to be important, the results showed that it does not create utility because the main concern of people at the moment is covering the high costs of treatment, especially in the private sector (26, 27).

The results indicated the willingness to choose health insurance plans with higher cost coverage and lower monthly premiums. It seems logical that individuals prefer to receive most services with the lowest monthly premiums. However, in the real world, it is impossible to provide maximum benefits with the lowest premiums to health insurance organizations due to the severe limitation of resources, unscientific management, high inflation rate, and lack of strategic purchasing. Previous studies in high- and low-income countries reported that "service benefits" and "extent of cost coverage" significantly impacted individual preferences. Uncertainty about using or not using health care services and facing catastrophic health expenditures

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may also affect people's rational decisions in choosing a health insurance plan (13, 16).

Since estimating WTP for health insurance and other health services and interventions is valuable for health policy making, this feature is included in most DCE studies. WTP shows how much people are willing to forego other costs for health insurance coverage, which reflects the value people place on health insurance. Therefore, the WTP for the coverage of health services is considered as the benefit of these services for society (28).

We found that people preferred higher levels of cost coverage to lower levels for most health insurance attributes except paraclinical services. This means that people tend to pay more to cover services costs through health insurance plans.

The highest WTP was related to "coverage of inpatient services in the private sector at 90%". In such a way, people were willing to pay 362,068 Rials more monthly premium by changing the coverage level of these services from 50% to 90%. Another study similarly showed that the greatest WTP was related to "increasing the coverage of inpatient services in the private sector" (16).

As we know, people will purchase health insurance plan only if the expected benefits are greater than its cost (premium) (29). Therefore, people tend to pay more for inpatient services in the private sector because their expected benefits are also higher. Some evidence from low-income countries suggests that people tend to purchase health insurance plans to receive quality services because free government services are usually limited in quantity and quality (30).

The lower WTP for more coverage of "paraclinical services" may be related to the comprehensive coverage of these services in the supplementary insurance package. This could be why people are unwilling to pay more for more coverage of "paraclinical services". A previous study in Ethiopia also showed that people were not WTP more to increase the coverage of paraclinical costs (13).

Limitations

One of the limitations that should be noted is that the methods of assessing the WTP tend to overestimate the WTP, since people may not pay attention to their budget when answering. Such people only consider the product or service they have been asked for and do not pay attention to their other expenses. Therefore, caution should be exercised in interpreting the WTP findings and the benefit of these attributes for society.

However, even if WTP estimates are higher than actual estimates, they provide valuable insights into the relative importance of different health insurance plan attributes (13). These insights can be used to design health insurance plans when resources are limited. In addition, the analysis is focused on data obtained from a limited geographical area. Therefore, our findings require cautious interpretations.

Conclusion

This study investigated health insurance preferences in one of Iran's provinces by using a DCE, which provides the possibility of eliciting preferences and WTP for health insurance plans.

The findings of this study provide useful information for policy makers considering how to best prioritize scarce resources available to the Iranian health system, and illustrate the welfare effects and people's reactions to changes in health insurance policies for policymakers and health insurance organizations. Also, the findings would help in designing health insurance systems and planning to change the country's basic health insurance to improve people's participation and increase the utility of health insurance packages.

The findings contribute to the richness of the literature on health insurance by adding scientific evidence about individual preferences for health insurance attributes. Such evidence is especially valuable for developing countries such as Iran and can help provide rich and policy-relevant information. These findings also help to understand the potential demand for health insurance in Iran and other developing countries.

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Ethical Considerations

This research was approved by the ethics committee of Shahid Sadoughi University of Medical Sciences in Yazd based on the approval of IR.SSU.SPH.REC.1396.148. Informed consent was obtained from all subjects. All methods were performed in accordance with the relevant guidelines and regulations.

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Authors' Contributions

M.R, M.B, A.K, and E.T contributed to the conception and design of the study; E.T and M.R collected the data; M.R, A.K, and M.B analyzed and interpreted the data; M.R wrote the first draft of the manuscript; B.A, T.L, Y.A, D.E and M.B reviewed and wrote sections of the manuscript; and B.A, T.L, Y.A, D.E, M.R and M.B critically revised the manuscript. All authors read and approved the submitted version.

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