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Preferences of older adults for healthcare models designed to improve care coordination: Evidence from Western Switzerland

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ABSTRACT

Implementing innovations in care delivery in Switzerland is challenging due to the fragmented nature of the system and the specificities of the political process (i.e., direct democracy, decentralized decision-making). In this context, it is particularly important to account for population preferences when designing policies.

We designed a discrete choice experiment to study population preferences for coordination-improving care models. Specifically, we assessed the relative importance of model characteristics (i.e., insurance premium, presence of care coordinator, access to specialists, use of EMR, cost-sharing for chronic patients, incentives for informal care), and predicted uptake under different policy scenarios. We accounted for heterogeneity in preferences for the status quo option using an error component logit model.

Respondents attached the highest importance to the price attribute (i.e. insurance premium) (0.31, CI: 0.27-0.36) and to the presence of a care coordinator (0.27, CI: 0.23 - 0.31). Policy scenarios showed for instance that gatekeeping would be preferred to free access to specialists if the model includes a GP or an interprofessional team as a care coordinator.

Although attachment to the status quo is high in the studied population, there are potential ways to improve acceptance of alternative care models by implementation of positively valued innovations.

1. Introduction

The Swiss healthcare system is considered to perform well in international comparisons on various dimensions including high healthy life expectancy, low amenable mortality, high satisfaction with the health care system, and good quality [1–4]. This, however, comes at a high cost, reflected by the second highest health expenditures per capita after the U.S. [5], above OECD average share of GDP spent on healthcare (11.3%) [6], and important participation of households in health care financing via expensive community-rated insurance premiums and high out-of-pocket payments [1,7-9]. With the epidemiological transition from lethal/acute to chronic conditions, representing more than 75% of total outpatient healthcare expenditures in the country [10,11], and an increasing life expectancy, Switzerland must accommodate to a growing number of patients with complex needs and frequent transitions between care settings. This highlights efficiency issues in our current system and requires new organization and financing models [12–16].

Specifically, earlier studies suggest that initiatives enhancing care coordination and that align with patient needs are effective, lead to favorable outcomes, reduce healthcare costs, and can eliminate inefficiencies in the system [17–20]. Coordination of care is the organization of patient care activities provided by multiple healthcare professionals, aiming to deliver holistic and appropriate care reflecting patients' needs [17]. Care coordination relies on good communications and effective care plan transitions between providers and patients [19]. Thus, it requires information exchange between the patient and the professionals, allowing each provider to have access to the information important for care delivery: e.g., the entire history, plan of care, previous testing and treatments at every encounter [17,21,22]. In a recent expert consultation mandated at the Federal level [23,24], several measures aimed at improving care coordination were suggested, including disease management programs based on networks of health professionals; insurance models that limit provider choice and/or strengthen gatekeeping role of the initial point of contact; definition of

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patient pathways, enabling all providers to develop a common understanding of their role; and promotion of networks with direct financial incentives for better coordination.

However, overcoming inefficiencies in spending and implementing coordination-improving countrywide innovations may be challenging due to the decentralized and fragmented organization and financing of the Swiss healthcare system [8,25-27]. In terms of governance, the general principles including health insurance regulation are set at the national level, but many health policy decisions (i.e. supply regulation, health insurance premium subsidies, long-term care, etc.) are taken at the level of the 26 cantons (i.e. States). Moreover, there is high private actor involvement in financing, as basic health insurance coverage is compulsory in Switzerland and the plans are sold by private companies in a strongly regulated market [8,25]. Approximately 50 companies compete essentially on price and administrative quality as the benefit package is fixed across products.

Basic health insurance covers mainly ambulatory care costs, a portion of inpatient care costs, and finances 37.9% of total health care expenditure [28]. The remaining is covered through the State (21.8%), other social insurances (6.3%), direct participation from households, including cost-sharing (21.6%), and a less strongly regulated private voluntary health insurance market (8.7%) [28]. Cost-sharing mechanisms include an annual deductible and 10% co-insurance with an annual stop-loss at 700 Swiss francs (CHF) [1]. Enrollees can depart from the default deductible level (i.e., CHF 300) in exchange of a lower premium (max. deductible of CHF 2′500) [29]. Basic coverage allows direct access to specialists and complete freedom of provider choice, but alternative models are available, such as gatekeeping or HMO-like plans. Granting a premium discount, these models have been increasingly chosen by the insured population over the past years (e.g., from 46.9% in 2010 to 65.1% in 2015 and 74.9% in 2020) [29,30]. Stemming from the above, the division of responsibilities and the specific financing mechanisms make implementation of reforms particularly challenging in this country [14].

Finally, Switzerland relies on direct democracy (Swiss can veto or call for reforms through public referenda) [1], which allows local populations to be directly involved in decision-making. A notable example dates back to 2012, when the Swiss voted on a new plan aimed to foster Managed Care nationwide to control cost and overcome challenges of population aging and chronic diseases [1,25,31]. The proposal focused on building care networks and improving coordination among healthcare providers, while the insured joining the Managed care plan could benefit from lower premiums by giving up their freedom of provider choice. Despite clear public support of the federal government, 76 percent of the Swiss population voted against the plan. Reluctance to give up freedom of provider choice, and reservations about losing established patient-provider relationships leading to two-tiered system were the likely reason for rejection [32]. Therefore, reforms acceptance and implementation are especially challenging in Switzerland. Many proposals addressing issues of efficiency and costs are currently in the policy pipeline, including some aimed at improving care coordination [20], which would benefit from a timely elicitation of public preferences [25,33,34].

In that context, we aimed to investigate population preferences for alternative care models designed to improve care coordination. Such analysis of preferences ultimately aims at assessing the acceptability of new models and identifying the most appropriate incentives to promote their dissemination. In relation to care coordination, we aimed also to explore more specifically whether the presence and profile of a care coordinator affects the acceptability of potential new models. We designed a discrete choice experiment (DCE) to assess the relative importance of key characteristics of care models for the 50+ general population, and allow the valuation of attributes in monetary terms as well as the prediction of uptake of new models under different policy scenarios. We focused on individuals aged 50+, as this population group is more likely to suffer from multiple chronic conditions, have high healthcare costs and complex pathways, and, thus, are more likely to benefit from new coordinated care models currently and in the near future [26].

2. Study data and methods

2.1. Discrete choice experiment methodology

We use DCE as our preference elicitation technique assessing the relative value of a good or service based on the attractiveness of its characteristics [35]. In a series of choice tasks, participants indicate a preferred option from two or more hypothetical scenarios, described using specific characteristics (attributes) with varying modalities (levels). In health care, examples of attributes and levels may include e.g., **side effects** (*serious* or *mild*); **waiting times** (*2 days, 1 week* or *2 weeks*); or **first point of contact for health issues** (*general practitioner, nurse, pharmacist* or *Telemedicine* (e.g., *phone call*)). Preferences are elicited after participants complete a series of such choice tasks, when they perform trade-offs between different levels of the presented attributes. DCEs are widely used in health policy studies, planning and resource allocation decisions in healthcare to quantify public preferences and trade-offs for care access and delivery characteristics in countries with different financing and healthcare structures [36–42]. DCEs are consistent with economic theory (i.e., the random utility model) and are considered within the framework of probabilistic discrete choice models in the literature [43–46]. The approach has specific strengths, including the ability to mimic real-world decision-making processes, to be visually attractive for respondents, and therefore less cognitively demanding than other approaches such as standard gamble (respondents are asked to choose between an option of interest and a risky option, where the probabilities of positive and negative outcomes are defined), or time trade-off (respondents are asked to trade off duration against option of interest, e.g., life in a better health state for shorter duration versus life in a worse health state for longer duration) [47–50]. Moreover, it is considered a convenient approach to investigate uptake of new interventions [51–54], or support complex decisions incorporating multiple characteristics at once. Another approach for preference elicitation is Best Worst Scaling (BWS), which was introduced in 2007 and is still gaining popularity [55]. This method is comparable to the DCE, while allowing measuring ‘more preferences’ than the DCE as it asks the respondents to select the ‘best’ and ‘worst’ features of the scenario [56]. However, the studies are inconclusive yet regarding which method is more preferred [57], and since DCE is more suitable to our research question, including modeling the uptake rate, we decided to use DCE method.

2.2. Selection of attributes

Our aim was to identify attributes reflecting features of healthcare delivery in Switzerland relevant to chronic patients and the general population aged 50+, that are actionable and realistic for policy implementation. Details on the qualitative development of the survey are available elsewhere [26]. In brief, an extensive literature search was first performed, followed by multiple rounds of stakeholder involvement, to obtain a manageable subset of attributes ($N = 8$). These attributes were tested and refined in focus groups with the general population and patients. For clarity, the process of DCE development is illustrated in Fig. 1. We aimed to define a list of attributes that not only are understandable for the public, but also relevant to the Swiss context and potentially actionable and modifiable by policies. Starting from an initial long list of potential attributes and several selection and refinement steps, agreement between stakeholders was reached for the following general constructs related to care coordination: data sharing, presence of a care coordinator, access to specialists. Several important characteristics were also discussed (e.g., trust in the care provider, being involved in decision-making, patient centeredness). We however

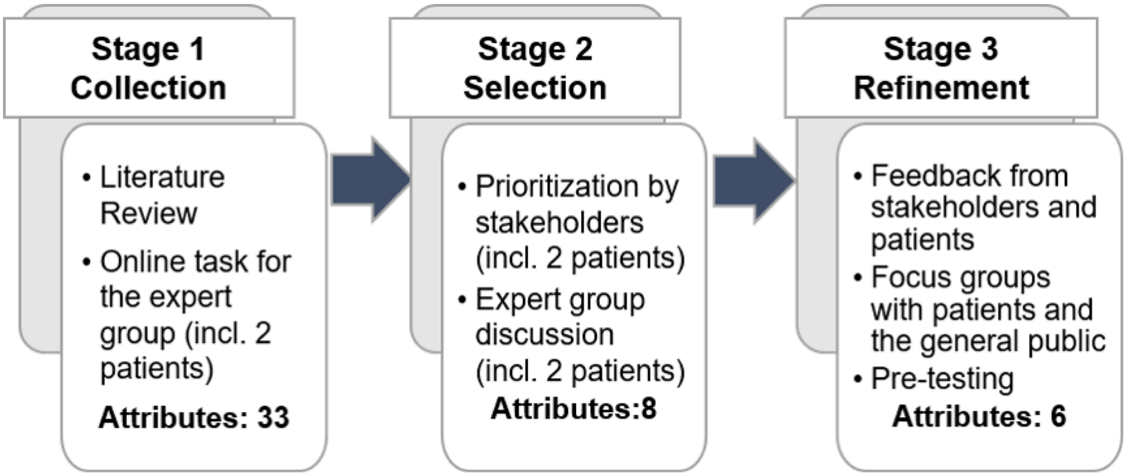

Fig. 1. Visual illustration of the processes of collection, selection and refinement of the attributes.

refrained from including them, as their interpretation is highly subjective and cannot be easily measurable and actionable. Additionally, the importance of informal care in care delivery and coordination for chronic patients, and cost-sharing as a potential barrier of access to care were raised, and the development of related attributes was suggested [26]. A final list of six attributes was validated in an online pilot study (N = 301) and includes: access to electronic medical record (EMR), designated care coordinator, access to specialists, compensation for informal care provision, exemption of chronic patients from paying deductibles and/or co-payments, and monthly premium change (Appendix Table 1).

2.3. Survey design

The survey had three main sections: general introduction and collection of background information, the experimental part (DCE), and follow-up questions on health, healthcare use, choice of health insurance, and opinions on the Swiss healthcare system [26]. At the beginning of the DCE section, detailed descriptions, instructions and definitions of attributes with their levels were provided. The experimental part of the survey consisted of repeated choices between two alternatives and a status quo option. Specifically, participants were first asked to choose between two hypothetical care delivery models. In a second step, participants were asked to choose between their preferred model from step one, and a third status quo option (i.e., “my current model”). The DCE was designed to optimize the amount of information obtained from each choice task completed by a respondent, while restricting survey length and complexity, following best practice [58, 59]. More details of the experimental design are described elsewhere [26]. An example of a choice set is presented in Appendix Figure 1.

Overall, 42 choice tasks were generated and divided into seven survey versions, and respondents were randomly allocated to one of these versions. Each version contained six choice sets, to which we added one practice task (first choice task), and one consistency test task (last choice task). Consistency is measured by comparing respondent choices for the test task and the exact same task later in the survey, so in our case the last task (8th) was a repetition of a task 4. We also assessed median survey completion time and frequency of using the strategy of straight lining (choosing only alternative 1 or alternative 2 throughout the whole survey). We aimed at reaching 900–1000 completed surveys, as according to the golden rule formulated by Johnson and Orme [60], that would be the optimal sample size. According to more basic calculations, 50 to 60 observations per response task, i.e., 420 respondents in total, would generally be considered sufficient [61].

2.4. Data collection

In total, 3′472 individuals from the Swiss population aged 50+ and residing in French-speaking cantons (approximately 23% of Swiss population lives in French-speaking cantons, with 13% of inhabitants of these cantons residing in rural areas, compared to 15% in overall Switzerland) [62] were invited to participate by mail. For respondents under 70 years old, an invitation letter to participate to the online survey, programmed on Qualtrics (Provo, UT, USA), was followed by two reminders. The same procedure was used for potential participants aged 70 years and older, although they had the option of answering on paper upon request. Such dual mode of data collection favors the inclusion of older individuals who are more likely to have chronic (and more severe) conditions, compared to online sampling that typically reaches healthier, younger, more educated and technologically more advanced individuals, potentially causing selection bias. A telephone hotline was set up to handle participants’ questions, comments and issues with the survey. Participants were rewarded via a lottery to win a CHF 300 cash prize (ca. USD 300). Ethics approval for this study (protocol submitted, Req-2019–01,265) was waived by The Cantonal Commission for the Ethics of Research on Human Beings (CER-VD, Lausanne, Switzerland).

2.5. Statistical analysis

2.5.1. Measuring preferences and willingness-to-pay (WTP)

First, we produced descriptive statistics of study participants: sociodemographic data, health status, healthcare utilization, insurance coverage, and opinions on the Swiss health care system. For the DCE section, the outcome of each of the six choice sets was a three-level categorical variable (alternative 1, alternative 2, or current model (i.e., status quo)), which can be interpreted as the conditional probability of preferring one alternative over the others given the attribute levels in the choice set [63]. The pilot data, together with earlier studies [25,29, 33,34,64,65] showed that the Swiss population, especially with increasing age, is reluctant to accept changes in the present state of affairs, therefore, expressing a high attachment to status quo. Thus, we decided to account for heterogeneity in status quo behavior by estimating an error component logit model (ECL), a special case of a mixed logit model accounting for the panel structure of the data (cmxtmixlogit, Stata 16.0) [66], where the coefficients of the alternative-specific constant (ASC) in the model are allowed to be random and follow a normal distribution. The information derived from the model (estimated means (μ) and standard deviations (SD) (σ) of an ASC coefficient) permits the calculation of the proportion of the population more likely to choose or avoid the status quo option. This is defined as $F(\mu/\sigma)$, where F is the standard normal cumulative distribution function.

All the attribute levels were dummy-coded, therefore we estimated the relative difference between the attribute level in question and the omitted (reference) attribute level. Additionally, we calculated the marginal WTP [67,68], allowing application of a monetary value to a change in specific attribute levels, calculated by dividing the coefficient of the relevant attribute level (β_i) by the cost coefficient (in our case cost is the monthly premium change β_p) $\frac{\beta i}{\beta p}$. Individuals self-reported the ranges of current monthly premiums they pay for health insurance and the scenarios reflected the changes in monthly premium (e.g. increase or decrease of 50 or 100 CHF). Therefore, we were able to calculate marginal WTP based on the combination of current self-reported monthly premiums and hypothetical premium changes reflected by the scenarios.

Further, based on coefficients estimates from the ECL model, we calculated the relative attribute weights using a range method, which compares the difference in coefficients for the best and worst levels of an attribute. This difference provides information on the relative importance of an attribute [69]. We calculated 95% confidence intervals using the Delta method [70].

2.5.2. *Acceptability of care models under various policy scenarios*

We calculated how the probability of choosing a given care model changed as levels of attributes changed. Specifically, we calculated uptake rates (choice probabilities), and then graphically illustrated these choice probabilities under different policy scenarios.

To calculate uptake rates, one needs to consider the change in the probability of taking the baseline option (i.e., the reference category) following a change in the level of one or more attributes. The probability of choosing option i over option j is given by:

$$P_i = \frac{e^{\beta' x_i}}{\sum e^{\beta' x_j}},$$

where x is the vector of attribute coefficients from the ECL model described above, comprising the scenario option in question [71,72]. Then, and as an illustration, the difference in the probabilities of choosing a model with a GP coordinating care compared to the baseline model, all other levels being kept equal, would be

$$P_{GP} - P_{Baseline\ (none)} = \frac{e^{\beta_{GP}}}{e^{\beta_{GP}} + e^{\beta_{Baseline}}} - \frac{e^{\beta_{Baseline}}}{e^{\beta_{GP}} + e^{\beta_{Baseline}}}.$$

In the first set of policy scenarios, we compared choice probabilities for gatekeeping model vs. standard model with free access to specialists. In the second set of scenarios, we compared choice probabilities for the following pairs of models:

- non-physician coordinating care versus no care coordinator,
- non-physician coordinating care versus a GP coordinating care,
- non-physician coordinating care versus a team coordinating care.

All policy scenarios were constructed from the baseline by altering one or several attribute levels (Table 1). The aim was to explore if these alterations switched the choice probabilities, showing how preferences changed from favoring one care model towards the other.

3. Results

3.1. *Sample characteristics*

Data were collected between March and April 2021. A total of 1′385 individuals participated in the survey, 227 surveys were filled in paper format and 1′158 online (response rate of 39% for individuals below 70, and 41% for individuals above 70 years old). Excluding 187 invitations returned by the post office (recipient could not be found, or the letter was refused), and 223 respondents who only partially or not at all completed the experimental part, we ended up with 975 fully completed surveys used for analysis. The median time to completion was 23.9 min, 82% passed the consistency test, 6.6% used the strategy of straight linning, and 21% always chose the status quo option. However, we decided to retain all respondents with fully completed DCE tasks in the main analysis, as we could not characterize any kind of decision heuristics pattern as erroneous [73–76]. Median age was 65, the majority were married or separated, half of the respondents were retired, and lived in couple with or without children (Appendix Table 2). There were more men (59.0%) than women, and 1/3 reported having 0 diagnosed chronic conditions, while another 1/3 reported having been diagnosed with 2+ diseases. Almost half of respondents had a gatekeeping insurance model with GP, and had the lowest deductible level of CHF 300 (45.4%).

Table 1
Baseline and constructed policy scenarios to investigate acceptability of various coordinated care models.

Scenario	Gatekeeping vs. Free choice	Non-physician coordinating care vs. No care coordinator; vs. GP coordinating care; vs. Team coordinating care
1	Introduction of a team coordinated care model	Introduction of monthly premiums discount by CHF 100 for all insured
2	Introduction of a team coordinated care model with CHF 50 higher monthly premium	Introduction of a broader access to the EMR to all health professionals with a CHF 100 monthly premium discount
3	Introduction of a GP coordinated care model	Introduction of a model with extended access to EMR for all physicians involved in care and CHF 50 monthly premium discount
4	Introduction of a GP coordinated care model with CHF 50 higher monthly premium	Introduction of a model allowing valorization of informal care givers by compensation with CHF 50 higher monthly premium
5	Introduction of a GP coordinated care model, allowing valorization of informal care givers by compensation, and exemption of all chronic patients from paying co-payments (they pay only deductibles)	Introduction of a model with extended access to EMR for all physicians involved in care, allowing for valorization of informal care by compensation with CHF 50 higher monthly premium
6	Introduction of a GP coordinated care model, allowing valorization of informal care givers by compensation, exemption of all chronic patients from paying co-payments (they pay only deductibles), but with CHF 50 higher monthly premium	Introduction of a model with extended access to EMR for all professionals involved in care, allowing for valorization of informal care by compensation, and CHF 100 monthly premium discount (best-case condition)

Baseline: no designated care coordinator; only the GP has access to the EMR; standard model with free access to the specialist; no compensation for informal care and no exemptions for chronic patients; monthly premium remains unchanged.

*Only the changes of described attributes are introduced to the baseline state, all other attribute levels remain at baseline.

3.2. *Relative importance of attributes and WTP*

We found that most attributes had signs matching those from the literature [40,77] (Table 2): attribute levels assumed to yield utility gains (e.g., a GP coordinating care, or informal care compensation) showed a positive utility, while those yielding potential disutility showed a negative sign (e.g., access to the specialist via gatekeeping or pre-specified list of providers, compared to free access).

Interestingly, individuals did not seem to strongly react to any premium reductions as compared to unchanged premiums, but they did react negatively to premium increases of CHF 50 or CHF 100 (Appendix Table 2). Exemption of chronic patients from only co-payment was valued almost equally or higher than exempting from both co-payment

Table 2

Coefficient estimates for healthcare delivery attributes, based on the results of Error component logit model.

	Coef.	Std. Err.	[95% Conf. Interval]	
Access to the Electronic Medical Record (EMR)				
All health professionals (physicians and non-physicians) involved in my care as well as my health insurance	Base level			
Only GP	0.02	0.09	−0.16	0.20
All physicians involved in my care	0.45***	0.09	0.27	0.63
All health professionals (physicians and non-physicians) involved in my care	0.47***	0.08	0.31	0.62
Designated care coordinator				
A referent (physician or non-physician) from my health insurance	Base level			
None (no designated coordinator)	0.27***	0.10	0.08	0.45
My GP	1.13***	0.10	0.94	1.32
A health professional who is not a physician	0.53***	0.10	0.34	0.73
A healthcare team including several healthcare professionals (physicians and non-physicians)	1.00***	0.09	0.82	1.17
Access to the specialist				
Direct access (free choice)	Base level			
Need to be referred by a family doctor (gatekeeping)	−0.58***	0.08	−0.73	−0.43
Direct consultation possible if the specialist is on a list (limited choice)	−0.55***	0.08	−0.69	−0.40
Chronic patient pay				
Both deductibles and co-payments	Base level			
Neither deductibles, nor co-payments	0.20**	0.09	0.02	0.38
Only co-payments	0.21**	0.09	0.04	0.38
Only deductibles	0.18**	0.09	0.01	0.36
Informal care formally				
Not compensated	Base level			
Compensated	0.44***	0.07	0.29	0.58
Compensated + access to additional services	0.51***	0.08	0.35	0.66
Monthly Premium Change				
- CHF 100	1.19***	0.11	0.98	1.40
- CHF 50	1.11***	0.10	0.91	1.31
Remains unchanged (CHF 0)	1.33***	0.11	1.11	1.55
+ CHF 50	0.74***	0.11	0.52	0.96
+ CHF 100	Base level			
Alternative Specific Constant (ASC)	3.19***	0.17	2.87	3.52
SD ASC	2.05	0.09	1.89	2.23
AIC/BIC	9′510.21/9′643.70			
Number of observations	5′850			
Number of individuals	975			

** Significant at the 5% level, *** Significant at the 1% level.
SD-standard deviation.

and deductibles, implying that the respondents prefer chronic patients to pay at least some part of their expenses. Importantly, the alternative-specific constant (ASC) of 3.19 is significant and positive showing very high tendency to choose the status quo. Moreover, the large standard deviation of the ASC (2.05) illustrates that there is heterogeneity regarding choosing status quo option, with only 6.0% (*F(3.19/2.05)*) never choosing the status quo. Relative weights calculated with the range method revealed that respondents attached the highest importance to premium change (weight 0.31, CI: 0.27 - 0.36) and care coordinator (weight 0.27, CI: 0.23 - 0.31) (Fig. 2). The lowest weight was observed for exempting chronic patients from paying deductibles or co-payments (0.05, CI: 0.01 - 0.09).

Relative importance was also shown in monetary values (Appendix, Table 3) with highest monthly WTP for care coordination by a family doctor (256 CHF) or a team (216 CHF). Conversely, respondents were willing to accept a monthly premium discount of CHF 115 and CHF 121 for limited access to the specialist doctors, compared to free choice.

3.3. Acceptability of care delivery models under various policy scenarios

In this section, we illustrate the trade-offs that people make under various policy scenarios to translate DCE results in more understandable terms for policy makers. First, we illustrate potential uptake of a care model with gatekeeping versus free access to specialists (Fig. 3a). It showed that the baseline probability of choosing the gatekeeping model was 0.36 (CI: 0.32 - 0.39), and the probability of choosing the free access model is 0.64 (CI: 0.61 - 0.68). Different policies can make the gatekeeping model more attractive. Assigning a designated coordinator, such as a GP or a team, in the gatekeeping model would increase its uptake rate by 0.41 (CI: 0.32 - 0.49) and by 0.35 (CI: 0.27 - 0.43) respectively, making it preferred over the free access to specialists model.

Substantial benefits are needed to make the non-physician coordinated models preferred over the models with a GP or a team coordinating care (Fig. 3b). The non-physician coordinated models are preferred over models with a GP coordinating care, only when they include all best-case features, such as formal compensation of informal care with access to special services, grant access to EMR for all health professionals involved in care, free access to specialists, and a premium decrease of 100 CHF. However, less benefit would be sufficient to switch preferences from team-coordinated models towards non-physician coordinated models: e.g., informal care compensation together with granting access to the medical file for all physicians involved in care would suffice even at monthly premium increase of 50 CHF.

4. Discussion

In this study, we used DCE to investigate preferences of the 50+ population for features of coordination-improving care delivery in Switzerland, as well as predict uptake rates of a set of policy scenarios, paying special attention to heterogeneity in status quo behavior.

Our findings showed the high tendency of choosing the status quo (i. e. their current model), with 21% of respondents systematically preferring this option. Such attachment to status quo has been observed in earlier studies [25,33,34,64,65]. In addition, a study conducted in Switzerland [64] revealed that older adults exhibited a stronger status quo bias than younger age groups when choosing health insurance models, and age did increase the compensation required to overcome status quo bias. One of the explanations, specifically for older population, may be the fear of interrupting current treatment, care continuity, and losing valuable knowledge about how things work with their current insurer [78].These findings are in line with the results of our study focused on population aged 50+. Globally, in history of Swiss votes on healthcare, individuals often claimed to be in favor of radical reforms in the popular ballots, but after fierce counter-campaigns the majority voted in favor of the status quo [25].

Monthly premium and care coordination were the two most valued attributes, especially with a GP or a team acting as designated care coordinators. These findings contrast with an earlier study conducted in Switzerland [33], which found that coordinated care models were rather negatively valued and that the participants required substantial compensation to accept them. Contrasting to our study, the attributes used in this earlier study focused on the restrictions of coordinated care models, rather than on a role of a designated care coordinator [33]. Other preference studies conducted in different countries, found that the responsibility of care coordinator and coordinated care approach was among the most important and highly valued attributes, which is in line with our results [79–81]. We also found that a non-physician healthcare professional as a designated care coordinator was less preferred than a GP or a team, although in multiple studies the option of a (specialist) nurse coordinator was positively valued by patients as alternative to GPs [82–85]. All options for care coordinator were preferred over a health insurance reference person: participants were willing to pay for all alternative options (even no care coordinator), just to avoid health

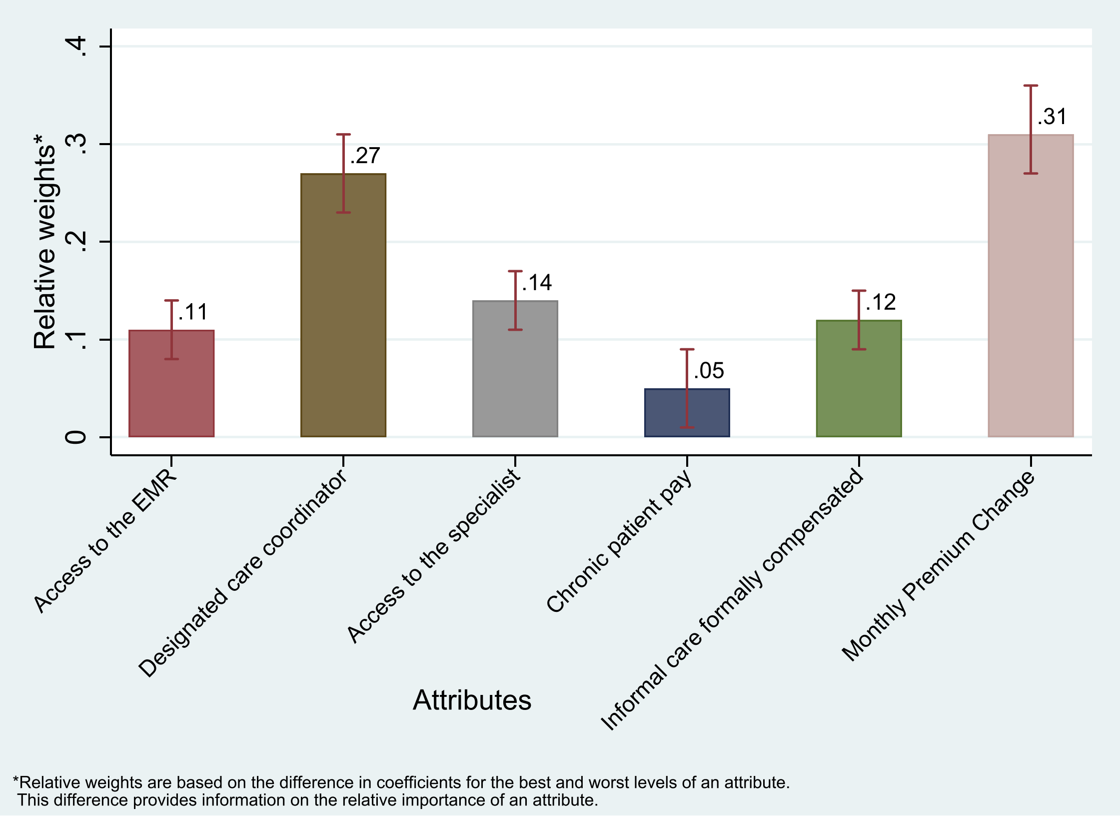

Fig. 2. Relative attribute weights with 95% confidence intervals based on ECL.

insurance being involved. Similar findings emphasizing the lack of trust towards health insurers in multiple countries, including Switzerland and the Netherlands, were published earlier [26,86–89]. Interestingly, low trust seems to be based more on perceptions (e.g., lack of information, belief in acting as profit-driven organizations, the fear of interfering in the doctor-patient relationship) than on objective economic behavior of insurers. Therefore, insurers are facing a critical challenge of building the relationship of trust with the insured population, which is exacerbated by negative public communication on insurers' behaviors [87].

In line with the findings of high status quo attachment, individuals preferred stability in monthly premiums leaving them unchanged, while not strongly reacting to any premium reductions. According to an earlier survey, 25% of the Swiss residents stated that they did not try to choose the insurer with the lowest premiums, but rather based on habit or tradition, or because they were satisfied with the current model [65]. Swiss individuals were less likely to price shop for themselves to reach lower monthly premiums; most insured people do not exit but stay with their current model, even if their premiums are 40% higher than the least expensive on offer [25,65]. On the other hand, this tendency is likely to change with the increasing premiums in the recent years, resulting in a larger share of individuals choosing gatekeeping/managed care models [25,30].

Although attachment to the status quo is high in our study population, our findings suggest several strategies to improve the acceptability of alternative care models. While respondents are price-sensitive, i.e., insurance premiums have a strong influence on their choices, they value benefits such as the presence of a care coordinator or improved circulation of information with an EMR, and some are willing to accept more systematic gatekeeping by general practitioners. Policymakers, health insurance companies and providers should ensure to make these features salient and understandable in future care models. Also, solutions need to be developed to decrease choice complexity and improve “health system literacy” in the population, especially in vulnerable groups.

Finally, the analysis of uptake rate showed that the individuals strongly prefer the standard insurance model with free access to specialists, but may be willing to accept gatekeeping models under certain policy scenarios. In such scenarios, the loss of freedom of specialist choice would be compensated by additional benefits (e.g., introducing a designated care coordinator). From a policy perspective, this is an important finding as if the population is willing to accept gatekeeping/managed care models with certain compensation in benefits, substantial cost-savings could be achieved in the long-term [90]. Additionally, compared to the current situation of no designated care coordinator, the Swiss adults positively value care coordination performed by a non-physician healthcare professional (e.g., nurse) and are willing to accept such model without additional compensation or benefits. But interestingly, it doesn't hold if a premium reduction of CHF 100 per month is offered. It may be explained in several ways: 1) by the negative expectations towards care quality associated with premium decrease [91]; 2) by the general stigmatization of quality of care provided by the physicians versus non-physicians whereby generally physicians were considered as more competent, and thus, were preferred [92–95]; 3) by the general mistrust in premium decreases as premium increases are far more expected outcome [29].

To our knowledge, our study is the first in Switzerland to focus on population preferences regarding the value of coordinated care delivery models. Our study, focused on a policy relevant issue, has several strengths. First, we developed a dedicated process involving multiple stakeholders for the selecting of attributes and attribute levels, while contributing to the quality and standardization of the reporting of this development process for DCE studies [26]. We involved various stakeholders to ensure the diversity of opinions, reflecting real-world policy relevance in a system with multiple actors, and we tested the survey with the target population to ensure understandability and relevance of the survey content. Second, we reached a relatively large sample size with 40% response rate, and used hybrid data collection mode (online and

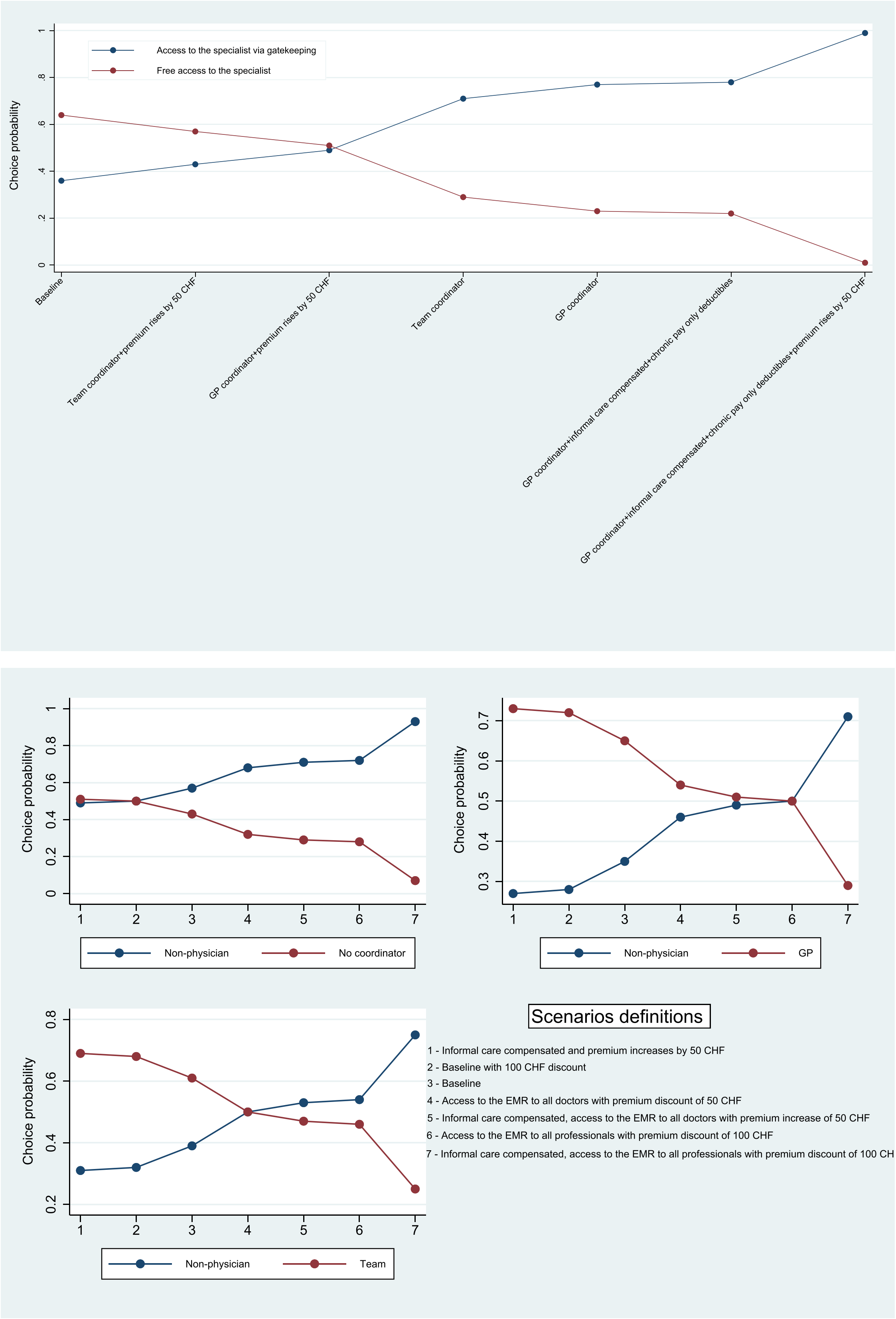

Fig. 3. a. Change of probability of choosing healthcare models with free access to the specialist versus access via gatekeeping under various policy scenarios. **b.** Change of probability of choosing healthcare models with non-physician coordinating care vs. no coordinator, a team or general practitioner (GP) under various policy scenarios.

paper) to account for the age and internet competence of the target population, to avoid selection bias occurring while relying only on online samples. Third, we applied a model allowing to explore heterogeneity of the population towards an issue of status quo attachment, which is crucial in the Swiss context and may partially explain the reluctance to accept the national Managed Care initiative in 2012. Finally, to ensure the applicability and appropriateness of policy scenarios, we refrained from subjective constructs and formulations (e.g., trust to the physician, patient activation, shared decision-making) while focusing only on actionable characteristics, not modified by individual perceptions or bias.

We are aware that innovations in healthcare system is a complex research question, and therefore we acknowledge specific limitations of the current study. First, methodological limitations refer to the application of the DCE and stated preference techniques. Specifically, hypothetical choice tasks raise concerns about external validity and whether the real-world decisions coincide with the hypothetical choices, simplifying heuristics (respondents ignore some of the presented information leading to irrational choices), or attribute non-attendance (some attributes were not considered) [96–98]. We tried to make the survey attractive and clear for the participants, and we verified the relevance among target participants in the multiple steps to diminish the occurrence of these issues. Second, our survey was conducted in the French-speaking region of Switzerland, which may limit generalizability of the findings to the other language regions. Preferences of the German-speaking or Italian-speaking populations may indeed differ due to cultural specifics and political involvement, as evidenced by previous research [9,99]. Third, potential care models focusing on care coordination may encompass multiple characteristics, and one may argue that we used only one clearly defined “Care coordinator” attribute. In fact, the use of the latter was preferred over multiple ones to limit the risk of ambiguity and confusion among the participants, who would judge them as interconnected resulting in redundancy or illogical combinations. Moreover, the combination of attributes reflecting data sharing, access to specialists and informal care together with care coordinator already reflect multiple features of potentially coordinated models [100,101]. Finally, as many different versions of health insurance models exist in Switzerland [102], with various monthly premiums, it was not possible to define one universal baseline premium that would be applicable to all respondents. Therefore, we used the premium changes to express the cost attribute and monetary values in WTP calculations. However, we acknowledge that the premium increases and decreases can have proportionally different effects depending on any individually paid premium level. In addition, since we used self-reported individual-specific premiums, the WTP calculations are to be interpreted with caution.

Future research should focus on investigating potential heterogeneity of population preferences and differences in uptake rates, depending on distinct clusters or population subgroups. Specifically, individuals from various language regions or levels of income, or healthy younger population and chronic older patients may have dissimilar preferences. Additionally, deeper insights into population preferences towards care delivery models may be achieved by analyzing the association between the population choices and such indicators, as healthcare utilization, opinions and trust in Swiss healthcare system, literacy and numeracy, and complexity of health insurance choice (large amount of existing health insurance models) [103,104].

Our results suggest that population preferences should be accounted for in the design and implementation of care models, to ensure alignment with needs, expectations, and improve uptake. One particularly crucial aspect is to get a better sense of what individuals understand as “care coordination”, and what their expectations are in this area. Previous studies have shown that this might strongly depend on individual characteristics [105,106]. Ultimately, if coordination efforts are in line with potential benefits (i.e., efforts are targeted on those most likely to benefits), this could positively improve the efficiency of resource allocation in our system. At a more macro policy level, possible reforms should be presented such that the valued benefits are appropriately framed and avoid disproportionate weighting of negative aspects. For instance, communication around the generalization of gatekeeping should emphasize benefits in terms of improved coordination and not solely focus on limited freedom of choice. Another important example is the perceived importance of EMR as a key instrument to improve coordination, as shown in numerous studies [22,107-109]. More widespread and efficient use of patient-centered EMR will be instrumental to support innovations in care models and Switzerland lags behind on this front [4,107].

5. Conclusions

Our study sheds light on the preferences of the population towards potential innovations and implementation of coordinated care, especially relevant within current policy framework and discussions of changes in Swiss healthcare system. It revealed the high importance of the cost attribute (changes in monthly premium) and the presence of a care coordinator for the population 50+ when choosing the new models of care delivery. Moreover, although high attachment to the current option or status quo corroborated existing body of literature, there are specific policy scenarios providing additional benefits, which have the potential to change the population choices and accept the alternative care delivery models. This study is of high importance for policy-makers, researchers, and health insurance representatives in designing future projects of reforms in healthcare, reflecting the issue of cost containment and better quality of care for multimorbid patients, the proportion of which is increasing worldwide.

CRediT authorship contribution statement

Anna Nicolet: Formal analysis, Software, Writing – original draft, Visualization, Investigation, Writing – review & editing. **Clémence Perraudin:** Conceptualization, Validation, Writing – review & editing. **Nicolas Krucien:** Formal analysis, Validation, Writing – review & editing. **Joël Wagner:** Validation, Conceptualization, Methodology, Writing – review & editing. **Isabelle Peytremann-Bridevaux:** Methodology, Supervision, Validation, Conceptualization. **Joachim Marti:** Conceptualization, Methodology, Supervision, Writing – review & editing, Funding acquisition, Project administration.

Declaration of Competing Interest

The authors declare no potential conflicts of interest

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.healthpol.2023.104819.

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