Health policy 161 (2025) 105420

Contents lists available at ScienceDirect

Health policy

journal homepage: www.elsevier.com/locate/healthpol

What matters most to the population in case of chronic conditions? Results from a discrete choice experiment in Italy

Milena Vainieri [a,*], Veronica Spataro [a], Sabina De Rosis [a], Filippo Quattrone [b], Sabina Nuti [a,b]

[a] Management and Health Lab, Institute of Management, Scuola Superiore Sant'Anna di Pisa, Piazza Martiri della Libertà, 33, Pisa, PI 56127, Italy
[b] Interdisciplinary Research Center for Health Science, Scuola Superiore Sant'Anna, Piazza Martiri della Libertà, 33, Pisa, PI 56127, Italy

ARTICLE INFO

Keywords:
Survey
Preferences
Experimental Design
Primary Care
Chronic Disease
Service delivery

ABSTRACT

Relational continuity, care coordination, and teamwork are widely recognized as key components of quality in primary care. This study investigates population preferences regarding organizational models of primary care, with a particular focus on the roles of general practitioners, specialists, and nurses. A Discrete Choice Experiment (DCE) was conducted through a nationwide online cross-sectional survey, employing a full factorial experimental design with 20 randomly selected choice sets to minimize cognitive burden. The attributes examined included coordination, relational continuity, and teamwork.

Data were collected from a representative sample of 2,553 respondents across Italy in early 2021. Results underscore the centrality of teamwork (OR=1.85 in mild and 2.31 in severe chronic conditions), followed by relational continuity (OR=1.60 in mild and 1.55 in severe conditions). Coordination ranks third (OR=1.31) for mild conditions but reaches parity with relational continuity in the context of severe chronic conditions. These findings offer robust evidence of differentiated preferences based on chronic disease severity and support the design of tailored primary care models.

In conclusion, this analysis highlights the importance of incorporating coordination, relational continuity, and teamwork in the configuration of primary care services, offering policy-relevant insights for adapting delivery models to the needs of patients with varying levels of chronicity.

1. Introduction

More than 40 years have passed since the 1978 conference of Alma Ata, which affirmed the importance of primary health care to achieve better health outcomes. Primary health care can be defined as services operating close to where people live, the first contact point of people, providing a range of services from preventive to curative and rehabilitative care, going beyond activities traditionally carried out by primary health care physicians [1]. Many countries have not yet fulfilled the core characteristics of primary health care identified by Barbara Starfield: equity in access, affordability, promptness, continuity, and coordination of care [2–4]. This happens despite studies reporting that when primary health care has been applied, healthcare systems have benefited from better health and a reduction of social disparities in access [5,4].

The 2018 Astana conference renewed the importance of strengthening primary health care, considering that the population's age and multimorbidity are becoming the norm [6]. The recent two years of the COVID-19 pandemic have highlighted the central role played by primary healthcare and the urgency to meet the citizens' expectations and expensive medical demands [7]. Primary health care is the front-line service of the health systems that aims at treating those who need care and helping people become more active in managing their health. Primary healthcare approaches may improve health system efficiency and health outcomes for people across different socio-economic levels and make health systems more people-centred [5].

The pandemic has clarified the role of primary care in ensuring a resilient healthcare system [2,8]. For this reason, many countries, including Italy, have allocated most of their national funds coming from the NGEU program to implement primary care. Emphasis, however, has been put on structural and technological investments, without a clear redesign of the organizational model and professionals' interactions [9, 5].

In fact, despite the call to strengthen primary health care, there is no single solution or model that can fit all health systems. Indeed, the

* Corresponding author.
E-mail address: milena.vainieri@santannapisa.it (M. Vainieri).

https://doi.org/10.1016/j.healthpol.2025.105420
Received 17 April 2023; Received in revised form 9 July 2025; Accepted 19 August 2025
Available online 20 August 2025
0168-8510/© 2025 The Author(s). Published by Elsevier B.V. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

organizational models, the financing systems, and the provision of care greatly vary across countries and the recent report of OECD on primary health care listed some examples of specific actions recommended to different countries [5,10]. In particular, the aging of the population is an important issue in organizational models and affects chronic care management and the role of primary health care. In the past decades, the Chronic Care Model has been proposed as a possible solution, but it has been implemented with a disease-centred approach instead of a patient-centred one [11–13]. This may fail in managing complex conditions determined by comorbidity [14]. Providing care to patients with multiple chronic conditions requires a comprehensive and focused-person approach, which means considering episodes of care as part of the life course, instead of taking care of a single disease and requires integration and coordination of health care services [15,16,4]. To this end, coordination and continuity are considered core values of primary health care.

This paper investigates patients' preferences in primary care, focusing on the relative value of care coordination and relational continuity. While relational continuity is a crucial factor [17], especially for chronic care patients [18], these aspects are rarely studied together in relation to coordination. To address this gap, we conducted a Discrete Choice Experiment (DCE) within a nationwide survey of the Italian population in 2021, examining preferences in cases of mild and severe chronicity.

After a brief introduction of some issues debated on chronic care and primary health care, we highlight the hypotheses tested through a discrete choice experiment to elicit the population preferences on specific characteristics of the primary health care services. Then, the paper reports the main findings and the discussions concluding with some remarks and suggestions for academics and policymakers.

2. The debated issues on chronic care and primary health care

Some fundamental dimensions to evaluate quality in primary care are continuity and coordination [19,17]. Continuity of care includes informational, relational, and management continuity [20,21].

Continuity is widely recognized as one of the most crucial dimensions in assessing the strength of primary care service delivery processes [3,22,10]. However, its significance may vary depending on the type of service provided [23,24]. Specifically, research indicates that the importance of familiarity with the provider tends to be higher in the context of routine check-ups compared to situations involving new symptoms such as colds or sudden pain [23]. Moreover, findings from a Swiss study suggest that for outpatient visits, structural elements such as the clinic's facilities may outweigh the importance of the doctor-patient relationship, especially when physicians demonstrate good listening skills [25]. Conversely, in certain circumstances, patients may prefer seeking a second opinion to gain a fresh perspective on their care [24].

Research shows that relational continuity is highly valued by people with chronic and psychological conditions, older people, and those with poorer health status, as it is usually associated with trust and quality of communication [26,27]. Longitudinal continuity, in terms of maintaining the relationship with the same doctor over time, is often used as an indicator of relational continuity [28]. Repeated interactions with the same professional enable trust by patients [29]. For chronic and multi-chronic patients, it is important that the general practitioner (GP) is aware of their history, to be able to give consistent advice, take responsibility, trust the patient and respect him [28]. Patients prefer not to have to "repeat their story" to multiple professionals, which is cited as the primary reason for patients to prefer a trusted healthcare professional [26]. Relational continuity significantly increases the self-management of chronic and multi-chronic patients, and it is associated with greater patient satisfaction [18]. Moreover, relational continuity has a positive impact on the patient's sense of security, confidence, and understanding, and on the experienced quality of healthcare [30].

For some groups of patients, care should be provided by the smallest number of professionals possible, be consistent with the patient's needs, and be uninterrupted as long as the patient requests it [26]. The fragmented nature of the healthcare system becomes apparent to patients when they need to contact multiple professionals to coordinate care, errors occur during transitions between different care settings, or when professionals disagree with each other about care and necessary services [30]. The interaction with different health services, possibly in different settings, can have an impact on the patient experience and outcomes produced [31,18].

Coordination of care reflects the organization of services between different types and levels of care to ensure that patients receive services that are appropriate to their needs and coherent across care settings and over time [20,32]. In some studies, continuity is positively associated with coordination [33]; however, it can happen that relational continuity, mainly with the GP, is not associated with coordination of care or what is sometimes called the case management [34].

The presence of a care coordinator (or case manager) is often cited as a solution to ensure continuity and coordination in the care of chronic patients. The care coordinator represents the person in charge of patients' care, and his functions, should include: serving as an easy-to-access point; coordinating the different types of health and social services that the patient needs; acting as contact person with patients and their families or caregivers, to have regular exchanges with them, book follow-ups, offer guidance on symptom management and provide assistance in everyday activities [31,35,30]. The care coordinator can vary between different types of patients, based on different preferences and health conditions. Care coordinators in the literature range from healthcare professionals to social workers. Indeed, nurses have been identified as a valuable source of information due to their ability to provide comprehensive and understandable advice [35,36,30] especially when patients are elderly assisted in long term care settings [35]. However, the majority of patients report that they prefer to receive information from a primary care professional, typically the GP [37–39]. Indeed, traditionally, GPs represent the professional figure that comes closest to the role of care coordinator but, according to patients, they must be able to broaden the boundaries of their activity, especially in terms of sharing information and teamwork [36]. Other studies show that patients prefer contact with specialists due to previous negative experiences with family doctors, who provide insufficient information to address their specific health problems [35].

3. Materials and methods

3.1. Study setting

Italian universal healthcare system follows a decentralized Beveridge model, regionally managed. Due to devolution, regions have developed distinct organizational and funding models, leading to variations in expenditure, performance, and care quality [40,41]. Governance is structured across three levels: national, regional, and local. The central government oversees regional health administrations, defines essential care levels, and allocates funding. Regions manage healthcare services by setting health plans, coordinating Local Health Authorities, distributing budgets, and monitoring performance. The local level delivers primary, acute, rehabilitative, and preventive care. Primary care is led by General Practitioners (GPs), compensated through capitation, fee-for-service, and performance-related pay under national and regional contracts. Patients can freely choose their GP, who serves up to 1,500 patients [42]. National policies promote GP collaboration, with 67% working in group practices, though regional participation varies between 20% and 84% (Ministero della [43]).

3.2. Cross-sectional survey

This work uses data from a cross-sectional study carried out between

February and March 2021 to investigate the experience, outcomes, and preferences of Italian citizens with care, with a particular focus on healthcare services for chronic patients.

The survey was administered through a web-based questionnaire on the Qualtrics Platform, and it consisted in an observational part and an experimental part. The observational part of the study included socio-demographic questions. The experimental part consisted in two DCEs aimed at investigating respondents' preferences regarding the service delivery configuration in the case of mild or severe chronic conditions.

3.3. Discrete choice experiment

The DCE method is based on consumer choice theory [44], which assumes that (1) the utility of goods can be defined by different characteristics (i.e., attributes) and that (2) each attribute varies systematically with different specifications (i.e., levels). Individuals evaluate the overall desirability of the product or service based on these attributes, making compromises between them. In this method, respondents are asked to choose the most preferred option between two or more alternatives (i.e., choice sets) generated by the various combinations of attributes. Thus, preferences are revealed indirectly through the respondents' choices, determining which attributes drive individuals' preferences and how changes in attributes and levels affect the respective preferences [45]. It is considered the most appropriate type of conjoint analysis, as it comes very close to real-world decision-making [46], and it is increasingly being used to elicit preferences and anticipate consumer choices in healthcare [47–50]. The application of DCE to elicit preferences of patients across health and social care has grown significantly during the past two decades to address calls for greater involvement of users in the design and delivery of care and services or to assess the quality of care from their point of view.

The DCE has been used to evaluate patients' preferences for four attributes, namely: type of professional, for the reference figure; trusted professional, as a proxy of relational continuity; type of work, as a proxy of teamwork; type of activity, as a proxy of care coordination. The attributes adopted and the respective levels are summarized in Table 1 and were chosen based on previous literature analysis. More details about attributes' definition, their relevance in literature and their connection with the main aim of the paper are provided in Appendix A. Since the GP is always trusted by design in the Italian health system, the combination "on duty GP" is not included.

The full factorial experimental design was realized with the STATA15 software, by means of the modified Fedorov algorithm that maximizes the D-efficiency of the design [51].

Alternatives used the same attributes varying only the levels which were assigned through systematic changes to ensure orthogonality and low probability of overlap among levels [52,53]. To limit cognitive fatigue and avoid overload, each participant responded to only one of the five blocks of each experimental design, selected at random from the 20 possible choice sets according to the block randomization strategy adopted by other studies (see for instance [49]. The respondent only must choose one option per choice set (the one in which he or she would feel more satisfied) and could not, go back or change answers once provided. More information about the scenarios and the choice sets are reported in Appendix B.

Table 1
Attributes and levels of the DCE.

Attributes	Levels
Type of professional	Specialist
	General practitioner (GP)
	Nurse
Trusted professional	Trusted (not for GP)
	On duty (not for GP)
	-empty level- (only for GP)
Type of work	Working alone
	Working in a multi-specialist team
Type of activity	Providing information on care pathway
	Organizing and coordinating my care pathway

3.4. Reference population selection and recruitment

The reference population of this study consists of people over 45 years old residents in Italy. The sample size was calculated by stratifying the population according to the following criteria: area of residence North-West, North-East, Centre, South, Islands and age group 45-55, 56-65, 65-74, 75+. By considering a reference level of 95% and a margin error of less than 8%, the authors estimated a theoretical sample size of 2224, rounded to 2500 respondents, stratified according to the above-mentioned criteria. The sample size was defined using the algorithm of Cannavò and Frudà [54]. The sample size was estimated considering a response rate of 30%.

Respondents were recruited by the above-mentioned Qualtrics Company. This service ensures data quality through respondent verification, screening procedures, and measures to prevent duplicate or fraudulent responses, enabling a targeted and reliable sampling process. It adheres to ethical standards for participant recruitment and data collection. Participants are informed about the study's purpose, procedures, and their rights before beginning the survey. An information sheet outlining privacy details, including how their data will be handled and their right to withdraw at any time, is provided after participants' acceptance to take part to the survey. Participation is entirely voluntary, and respondents must read informed consent before proceeding with the survey.

3.5. Statistical analyses

A descriptive analysis of the sample was computed through conditional logit modelling using STATA 15 software [55]. Conditional logit relates the probability of choice among two or more alternatives to the characteristics of the attribute levels defining those alternatives. The conditional logit model was employed to analyze the DCE data, as it is widely used for modeling choice behavior in studies with discrete alternatives. This approach has been effectively applied in similar research, for instance, Bellé et al [56], where it was used to examine preferences of population on reducing the privacy rights under crisis circumstances. The model's simplicity and interpretability make it an appropriate choice for this analysis. Respondent preferences were identified with respect to the different levels characterizing the attributes. Subsequently, a post-estimation analysis was computed, to create predicted values. More specifically, the authors computed the predictions of the respondents' choices considering a different combination of attributes' levels, to compare their preferences. Finally, a comparison was made between the two different experiments, which had a slightly different scenario of choice: mild chronic condition vs severe chronic condition. Respondents' preferences were identified with respect to main effects and, secondly, to interaction effects considering the characteristics of respondents (i.e., age, sex, being a chronic patient, geographical area of residence) and the experience with care (i.e., service use, professional reference). Throughout the analysis, the p-value cut-off considered for statistical significance was $p<0.01$.

4. Results

The number of completed questionnaires suitable for data analysis is 2553.

The sample consisted of participants with a slight majority of females and a nearly equal distribution of males. Most participants resided in the North-West and Centre regions, with the majority being Italian citizens. In terms of age, most participants were between 55-64 years, followed by those aged 45-64 years. Regarding education, the majority had completed high school, with a significant proportion holding graduate

or postgraduate qualifications. The sample included a mix of health statuses, with most participants reporting no chronic conditions, a significant number having one chronic condition, and a notable portion experiencing multiple chronic conditions. Table 2 shows the characteristics of the respondents and of the Italian population aged 45 years and older, based on data from 2021 or the closest available year. The population data were retrieved from the Italian National Institute of Statistics (ISTAT). Tables 3 shows the conditional logistic regressions' results for the DCEs of both mild and severe chronic conditions. For each of the four attributes in the DCEs, the table displays the following items: odds ratios (OR), standard errors (SE), p-values (through the asterisk) and the percentage change in odds when the corresponding attribute varies from the reference level to the corresponding one (OR variation %). The reference terms are the general practitioner, on duty, working alone, and giving information about the care path. OR represents the probability to prefer the choice of a service configuration with the respect to the reference terms. Hence, a unitary OR means that there is an equal probability of preference between the service configuration and the reference terms. An OR higher than the unit means that there is a higher probability of choice, while an OR of less than the unit means that the choice is less likely to happen.

All attributes have a significant impact on respondents' decisions, in both mild and severe disease scenarios with the exception of the specialist in the mild chronic condition so that, other things being equal, there is no statistical difference between the probability of choosing a (trusted) GP or an on-duty specialist, working alone providing information on care pathway.

Table 3 presents the preferences observed concerning individual attributes. For patients with mild chronic conditions, there is a preference for GPs as the primary reference figure over nurses, whereas specialists are preferred for severe conditions. The presence of a trusted professional significantly increases patient preference, by 60% for mild conditions and 55% for severe conditions ($p < .001$). Additionally, coordination of care, rather than just providing information about the care path, increases preference by 31% for mild conditions and 54% for severe conditions. Teamwork emerges as the most influential characteristic, increasing patient preference by 85% for mild conditions and more than doubling for severe conditions ($p < .001$).

In terms of main effects, teamwork emerges as the strongest determinant for both mild and severe conditions, as indicated by the odds ratio (OR). Following teamwork, continuity is deemed the most important attribute for patients with mild chronic conditions, followed by coordination. For patients with severe chronic conditions, the importance of coordination increases, reaching the same relevance as continuity.

Figure 1 compares various service delivery combinations based on attributes (teamwork/solo, trusted/on-duty, information/coordination) and professional figures (Specialist/Nurse), with the GP as the reference point. In cases of severe conditions, the basic configuration of a Solo GP providing only information may be preferred by on-duty specialists and even on-duty nurses working in a team (Figure 1B). In cases of mild conditions, the usual care - a solo GP providing only information - may be substituted or preferred only in the case of on-duty specialists working in a team (Figure 1A).

When relational continuity is ensured (Figure 1C and D) with a specialist, the specialist is consistently preferred over the solo GP. Additionally, when the specialist coordinates care, they are preferred over the GP even if the specialist works in a team and coordinates care. Furthermore, when a nurse is trusted and coordinates care, they seem to be preferred to the solo GP in cases of severe conditions. In cases of severe conditions (Figure 1D), the configuration of a trusted nurse who both coordinates and works in a team is preferred over all combinations of attributes related to the GP, with the only exception being a GP who both coordinates care and works in a team.

Additional results of the post-estimation analysis, based on the prediction of the probability of choosing different service configurations after estimation, can be found in Appendix C.

Table 2
characteristics of respondents (n=2553) and Italian population aged 45 years and older (data from 2021 or the closest available year.

Variables	Categories	Number (%)	Italian population >45 years (Number, %)
Area of residence	North-East	502 (20%)	6.361.916 (20%)
	North-West	694 (27%)	8.766.254 (27%)
	Centre	516 (20%)	6.505.089 (20%)
	South	558 (22%)	6.980.340 (22%)
	Islands	283 (11%)	3.408.169 (11%)
Sex	Female	1315 (52%)	17059819 (53%)
	Male	1238 (48%)	14.961.949 (47%)
Age	45-54	837 (33%)	9.510.176 (30%)
	55-64	1068 (42%)	8.570.061 (27%)
	65-74	525 (21%)	6.915.504 (22%)
	>74	123 (5%)	7.026.027 (22%)
Highest education qualification	No educational qualification / elementary education	108 (4%)	8.004.224 (22%)
	Middle school	390 (15%)	11.524.900 (32%)
	High school	1455 (57%)	11.728.486 (33%)
	Graduate or postgraduate	600 (24%)	4.795.752 (13%)
Citizenship	Italian	2454 (96%)	30.415.408 (95%)
	Not Italian	99 (4%)	1.606.360 (5%)
Chronicity	Not chronic	945 (37%)	39,02%
	One chronicity	919 (36%)	24,96%
	More than one chronicity	689 (27%)	36,02%

Table 3
conditional logistic regression results for the DCEs on both mild and severe chronic conditions.

		Chronic conditions	
		Mild	Severe
ATTRIBUTES	LEVELS	OR (SE)	OR (SE)
Type of professional	General Practitioner	-	-
	Specialist	1.04 (.046)	1.83* (.085)
	Nurse	.38* (.018)	.59* (.029)
Trusted professional	On duty	-	-
	Trusted	1.60* (.058)	1.55* (.058)
Type of work	Working alone	-	-
	Working in team	1.85* (.047)	2.31* (.060)
Type of activity	Giving information about the care path	-	-
	Coordinating the care path	1.31* (.0344)	1.54* (.040)

Notes: The reference terms are the general practitioner, on duty, working alone, and giving information about the care path, indicated by the hyphen. (*) indicates when the p-value<0.01. For mild chronic conditions $\chi 2$: 2037.43 *Prob* > $\chi 2$ *is 0.00 whilst* for severe chronic conditions $\chi 2$: 2405.15 *Prob* > $\chi 2$ *is 0.00*

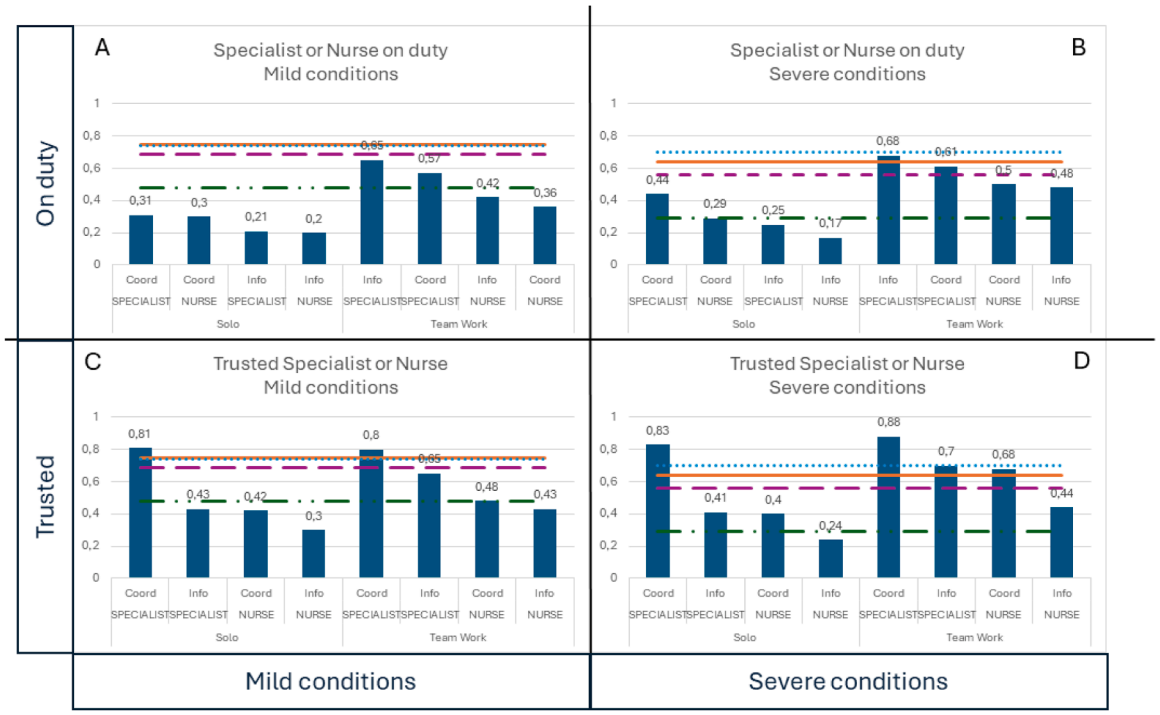

Figure 1. Post-estimation results based on the combination of attributes. A and B report the results of professionals on duty respectively for mild and severe conditions, C and D report the results of trusted professionals respectively for mild and severe conditions.
Notes: Continuous line is the case of Solo GP who coordinates care; dotted line is the case of GP working in team who coordinates care; mixed line is the case of Solo GP who provides only information and dashed line is the case of GP working in team who provides only information. Info: giving information. Coord: coordinating the pathway.

The analysis of interaction effects driving citizens' preferences confirms all results in figure 1. Considering different respondents' characteristics analysed (e.g., sex, age, educational level, geographical area of residence), the direction of the preferences was confirmed, while very few variations were observed in the probability of choosing a specific service configuration.

Specifically, being a chronic patient does not alter the interaction effects illustrated in Figure 1. Additional details regarding the small differences in preference magnitudes for both scenarios, namely mild and severe chronic conditions, are outlined in Appendix D. The absence of differences in these effects could be expected considering the characteristics of the respondents; indeed, more than half of them suffer from at least one chronic condition, as indicated in Table 2.

5. Discussion

Our findings align with similar studies conducted in other countries that have investigated preferences for primary care organizational models. Indeed, most of the attributes included in our DCE (type of professional, trust, teamwork, and care coordination) are in line with those identified in other studies that applied DCE in primary care [57] where aspects such as provider type, continuity of care, information provision, and organization of services were commonly explored and valued by patients in different countries (England, Scotland, Sweden, Denmark, Germany, USA). However, our study adds a distinctive perspective by examining the differential value placed on relational continuity and coordination depending on the severity of the condition, an aspect less frequently explored in previous DCEs. For example, research by Cheraghi-Sohi et al. [58] and Rubin et al. [59] on relational continuity in the UK supports our conclusion that consistency of care is a key element in patients' preferences, particularly for chronic conditions. Similarly, studies in other European countries, such as those by Seghieri et al. [49] in Italy and Hole [60] in Norway, highlight the importance of continuity and coordination in healthcare settings. This insight is particularly relevant given recent healthcare reforms, such as Italy's Ministerial Decree 77 of 2022, which aims to promote integrated, team-based care. Our results also resonate with findings from other studies on interprofessional teamwork, such as those by Bonciani et al. [61] and Kerrissey et al. [62], which emphasize the value of collaborative practices in healthcare. These cross-country comparisons underscore the relevance of care coordination and relational continuity in improving patient outcomes, while also highlighting the contextual factors, such as healthcare reforms and professional practices, that may shape preferences in different settings. In particular, our findings underscore that, in the case of severe chronic conditions, relational continuity may be balanced by care coordination.

The empirical evidence underscores the importance of introducing teamwork into all policy strategies for chronic care models. Our analysis indicates that for severe chronic conditions, the significance of coordination increases (refer to Table 2), ultimately matching the importance of relational continuity. Thus, under specific circumstances, coordination may surpass relational continuity in preference; for instance, on-duty specialists working in a team and coordinating care are preferred over GPs working in a team without coordinating the care path (refer to Figure 1B and D). The examination of various alternative combinations confirms that teamwork and the practice of coordination outweigh relational continuity when patients suffer from severe chronic conditions.

Such insights hold the potential to significantly influence policy and health system strategies for managing chronic diseases. By gaining a better understanding of patient preferences concerning primary care, policymakers will be better positioned to promote truly patient-centred health systems, also avoiding the one-fits-all models. This impact can manifest in two distinct ways: a) through a segmented approach, distinguishing between mild and severe chronic conditions, and b) by integrating hybrid models that incorporate different coordinating

figures. Recent research on nursing organizational models in acute care settings has demonstrated that certain elements of theoretical models may not be perceived by patients as relevant as expected, while hybrid models have shown a positive impact on patient perceptions of care services [63]. Primary care policies based on the key role of nurses should consider these findings by designing hybrid models according to the severity of health conditions. Our findings suggest potential for task shifting among healthcare professionals for individuals with chronic conditions. This finding aligns with the concept of task shifting defined by van Schalkwyk et al. [64] "task shifting has the potential to contribute to health systems strengthening when accompanied by adequate planning, resources, education, training and transparency" (p. 1379).

Our study has several strengths. First, to our knowledge, this is the first study investigating the preferences of the population on core attributes of primary care in the scenario of chronic conditions: relational continuity and coordination of care. Second, it contributes to the literature by providing information on the different priorities the population assigns to coordination, teamwork, and continuity of care in the case of both mild and severe chronic conditions. Third, the analysis benefits from a solid methodology based on an experimental survey, which is considered a pivotal tool for social scientists [65].

However, some limitations of the study need to be acknowledged. Firstly, despite the study sample comprises people over 45, a limitation consists of lower representativeness of the over 75 age group, which instead represents the most care-demanding and experienced group of citizens. Secondly, the design of the DCE was not informed by a prior qualitative study [66,48]; however, it was based on a previous literature review [49]. Thirdly, the scenarios presented to the population report the case of a single disease. Thus, future studies could consider multi-morbidity conditions, which are quite frequent among elderly. A fourth limitation relies upon the number of attributes used in the study, which are limited due to the methodology used. This choice was made to avoid placing a considerable cognitive burden on respondents. Future studies could consider some factors investigated in other research works, such as the waiting times [49,67], cost and accessibility. In particular, a more comprehensive DCE would address how to redesign chronic care services. Another limitation is related to the fact that the findings of this research are specific to the Italian healthcare system. Despite this limitation, this study provides a foundation for future investigations on respondents from other countries, because a different governance model of the health system and past different experiences with healthcare services might lead to different weights of the attributes.

Future research avenues stemming from this study include confirming or challenging the priorities assigned to attributes in different jurisdictions. Variations in health system governance and cultural contexts may influence people's preferences. Additionally, investigating scenarios involving multi-morbidity conditions could provide further insights into the holistic view of individuals versus disease-centric approaches. Other research could also complement the results of this study by incorporating additional attributes considered important in redesigning healthcare services, such as cost, waiting times, and access. Lastly, exploring the needs of older individuals requiring more social care services could deepen our understanding of healthcare delivery for this demographic.

6. Conclusions

Due to the necessity of moving care of patients with chronic conditions outside of the hospitals, and the increased specialization and fragmentation within health care services, the role of coordination in primary care is increasingly growing. The results of this experimental study provide evidence of the population's preferences for efficient coordination of care, particularly for severe chronic conditions. Such information could inform policy and health system efforts to manage chronic diseases.

Our study reveals that trusted specialists who coordinate care, regardless of whether they work in a team or independently, are typically preferred by individuals with both mild and severe chronic conditions. Particularly noteworthy is the preference for trusted nurses, ensuring relational continuity and coordinating care within a team, over GPs who work alone, especially in cases of severe chronic conditions. Thus, under specific circumstances, nurses could serve as substitutes for GPs, as perceived by patients.

These insights can aid health managers in designing organizational models for chronic care, considering variations in professional shortages across geographical areas. For instance, in rural areas with GP shortages, promoting organizational models with trusted nurses working in teams and coordinating care, facilitated by digital technologies, could be beneficial. Conversely, in urban areas with concentrated specialists, healthcare managers could leverage specialists to provide care for chronic patients in the absence of GPs.

The flexibility of organizational models is crucial, as one solution may not fit all contexts. Models must adapt to changing healthcare service needs and environmental circumstances. The evaluation of alternative models depends on the specific context of each geographical area, considering the diverse primary care models and GP roles across European countries and even within the same country.

CRediT authorship contribution statement

Milena Vainieri: Writing – review & editing, Writing – original draft, Supervision, Investigation, Funding acquisition, Conceptualization. **Veronica Spataro:** Writing – review & editing, Writing – original draft, Investigation, Formal analysis, Data curation. **Sabina De Rosis:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation. **Filippo Quattrone:** Writing – review & editing. **Sabina Nuti:** Writing – review & editing.

Declaration of competing interest

The authors declare no conflict of interests.

Acknowledgments

We would like to acknowledge the General Directorate for Health Planning of the Italian Ministry of Health—Offices 2 (Dr. Maria Donata Bellentani and Dr. Modesta Visca) and 6 (Dr. Simona Carbone, Dr. Lucia Lispi, Dr. Cristina Giordani) for their support. The research presented in this article is part of the project "Sperimentazione osservatorio sugli esiti e sull'esperienza dei pazienti cronici," funded by the Italian Ministry of Health.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.healthpol.2025.105420.

References

[1] Saltman, R. B., Rico, A., & Boerma, W. (2006). *Primary care in the driver' s seat?* European Observatory on Health Systems and Policies Series.
[2] Allen LN, Dambha-Miller H. COVID-19 and international primary care systems: rebuilding a stronger primary care. BJGP Open 2020;4(4):1–3.
[3] Kringos D, Boerma W, Hutchinson A, Van der Zee J Groenewegen. The breadth of primary care: a systematic literature review of its core dimensions. BMC Health v Res 2010;10(1):1–13.
[4] Starfield B. Politics, primary healthcare and health: was Virchow right? J Epidemiol Community Health 2011;65(8):653–5.
[5] OECD. Realising the full potential of primary health care. OECD Health Policy Stud 2020. Available at, https://www.oecd-ilibrary.org/deliver/a92adee4-en.pdf?itemId=/content/publication/a92adee4-en&mimeType=pdf.
[6] Lancet T. The Astana Declaration: the future of primary health care? TheLancet 2018;392:1369.

[7] Dunlop C, Howe A, Li D, Allen LN. The coronavirus outbreak: The central role of primary care in emergency preparedness and response. BJGP Open 2020;4(1):3–5.
[8] Rasanathan K, Evans TG. Chang health Alma-Ata 2020;98(11):801–8.
[9] Mauro M, Giancotti M. The 2022 primary care reform in Italy: improving continuity and reducing regional disparities? Health Policy (N Y) 2023:104862.
[10] Schäfer WL, Boerma WG, van den Berg MJ, de Maeseneer J, de Rosis S, Detollenaere J, Greß S, Heinemann S, van Loenen T, Murante AM, Pavlič DR, Seghieri C, Vainieri M, Willems S, Groenewegen PP. Are people's health care needs better met when primary care is strong? A synthesis of the results of the QUALICOPC study in 34 countries. Prim Health Care Res Dev 2019;20:1–9.
[11] Ceramidas DM, Glasgow NJ. Multi-morbidity: A system design challenge in delivering patient-centred care. Aust Health Rev 2013;37(3):309–11.
[12] Smith SM, Soubhi H, Fortin M, Hudon C, O'Dowd T. Managing patients with multimorbidity: systematic review of interventions in primary care and community settings. BMJ (Online) 2012;345(7874):1–10.
[13] Starfield B, Lemke KW, Bernhardt T, Foldes SS, Forrest CB, Weiner JP. Comorbidity: implications for the importance of primary care in "case" management. Ann Fam Med 2003;1(1):8–14.
[14] Piccinini-Vallis H, Lee-Baggley D, Stewart M, Ryan B. Gestational weight gain trajectories in primary care. Can Fam Physician 2016;62(7). e407–e414.
[15] Hopman P, De Bruin SR, Forjaz MJ, Rodriguez-Blazquez C, Tonnara G, Lemmens LC, Rijken M. Effectiveness of comprehensive care programs for patients with multiple chronic conditions or frailty: a systematic literature review. Health Policy (N Y) 2016;120(7):818–32.
[16] Palmer K, Marengoni A, Forjaz MJ, Jureviciene E, Laatikainen T, Mammarella F, Onder G. Multimorbidity care model: recommendations from the consensus meeting of the Joint Action on Chronic Diseases and Promoting Healthy Ageing across the Life Cycle (JA-CHRODIS). Health Policy (N Y) 2018;122(1):4–11.
[17] Schäfer WL, Boerma WG, Murante AM, Sixma HJ, Schellevis FG, Groenewegen PP. Assessing the potential for improvement of primary care in 34 countries: a cross-sectional survey. Bull World Health Organ 2015;93(3):161–8.
[18] Vainieri M, Quercioli C, Maccari M, Barsanti S, Murante AM. Reported experience of patients with single or multiple chronic diseases: empirical evidence from Italy. BMC Health v Res 2018;18(1):1–9.
[19] Hansen J, Groenewegen PP, Boerma WGW, Kringos DS. Living in a country with a strong primary care system is beneficial to people with chronic conditions. Health Aff 2015;34(9):1531–7.
[20] Crump H, King J, Graham C, Thorlby R, Raleigh V, Redding D, Goodwin N. Developing a user reported measure of care co-ordination. Int J Integr Care 2017;17(1).
[21] Reid RJ, Haggerty JL, McKendry R. Defusing the confusion: concepts and measures of continuity of healthcare. Health Serv Res Found 2002.
[22] Pavlič DR, Sever M, Klemenc-Ketiš Z, Švab I. Process quality indicators in family medicine: results of an international comparison Service organization, utilization, and delivery of care. BMC Fam Pr 2015;16(1):1–11.
[23] Oliver D, Deal K, Howard M, Qian H, Agarwal G, Guenter D. Patient trade-offs between continuity and access in primary care interprofessional teaching clinics in Canada: A cross-sectional survey using discrete choice experiment. BMJ Open 2019;9(3).
[24] Pandhi N, Saultz JW. Patients' perceptions of interpersonal continuity of care. J Am Board Fam Med 2006;19(4):390–7.
[25] Junod Perron N, Favrat B, Vannotti M. Patients who attend a private practice vs a university outpatient clinic: how do they differ? Swiss Med Wkly 2004;134(49-50):730–7.
[26] Freeman G, Hughes J. Contin care patient exp 2010. https://www.kingsfund.org.uk/sites/default/files/Continuity.pdf.
[27] Hemmings N, Rosen R, Palmer W, Keeble E, Williams S, Paddison C, Imison C. Improving access and continuity in general practice: practical and policy lessons. Br J Gen Pract 2019;69(suppl 1).
[28] Murphy M, Salisbury C. Relational continuity and patients' perception of GP trust and respect: a qualitative study. Br J Gen Pract 2020;70(698):E676–83.
[29] Tarrant C, Dixon-Woods M, Colman AM, Stokes T. Continuity and trust in primary care: A qualitative study informed by game theory. Ann Fam Med 2010;8(5):440–6.
[30] Wodskou PM, Høst D, Godtfredsen NS, Frølich A. A qualitative study of integrated care from the perspectives of patients with chronic obstructive pulmonary disease and their relatives. BMC Health v Res 2014;14(1).
[31] Boye LK, Mogensen CB, Mechlenborg T, Waldorff FB, Andersen PT. Older multimorbid patients' experiences on integration of services: A systematic review. BMC Health v Res 2019;19(1):1–9.
[32] Hofmarcher M, Oxley H, Rusticelli E. Improving health Care System performance through better Co-ordination of care. OECD Health Work Pap No 30 2007. https://doi.org/10.1787/9789264074231-4-en.
[33] Christakis DA, Wright J, Zimmerman FJ, Bassett AL, Connell FA. Continuity of care is associated with well-coordinated care. Ambul Pediatr 2003;3(2):82–6.
[34] Parkerton PH, Smith DG, Straley HL. Primary care practice coordination versus physician continuity. Fam Med 2004;36(1):15–21.
[35] Lawless MT, Marshall A, Mittinty MM, Harvey G. What does integrated care mean from an older person's perspective? A scoping review. BMJ Open 2020;10(1). e035157.
[36] National Voices. Integrated care: what do patients, service users and carers want?. https://www.nationalvoices.org.uk/publications/our-publications/integrated-care-what-do-patients-service-users-and-carers-want; 2013.
[37] Butterworth JE, Campbell JL. Older patients and their GPs: shared decision making in enhancing trust. Br J Gen Pract 2014;64(628). e709–e718.
[38] Schäfer WL, Boerma WG, Schellevis FG, Groenewegen PP. GP practices as a one-stop shop: how do patients perceive the quality of care? A cross-sectional study in thirty-four countries. Health v Res 2018;53(4):2047–63.
[39] Sheaff R, Halliday J, Byng R, Øvretveit J, Exworthy M, Peckham S, Asthana S. Bridging the discursive gap between lay and medical discourse in care coordination. Sociol Health Illn 2017;39(7):1019–34.
[40] Nuti S, Noto G, Vola F, Vainieri M. Let's play the patients music: A new generation of performance measurement systems in healthcare. Manag Decis 2018;56(10):2252–72.
[41] Ricciardi W, Tarricone R. The evolution of the Italian National Health Service. Lancet 2021;398(10317):2193–206.
[42] ISTAT. Annuario Statistico Italiano 2021. Available at, https://www.istat.it/storage/ASI/2021/capitoli/C04.pdf; 2021.
[43] Minitero della Salute (2021). Annuario Statistico del Servizio Sanitario Nazionale. Available at: C_17_pubblicazioni_3299_allegato.pdf (salute. g ov.it).
[44] Lancaster KJ. A new approach to consumer theory. J Polit Econ 1966;74(2):132–57.
[45] Lancsar E, Louviere J. Conducting discrete choice experiments to inform healthcare decision making: A user's guide. PharmacoEconomics 2008;26(8):661–77.
[46] Hainmueller J, Hopkins DJ, Yamamoto T. Causal inference in conjoint analysis: understanding multidimensional choices via stated preference experiments. Polit Anal 2014;22(1):1–30.
[47] de Bekker-Grob EW, Ryan M, Gerard K. Discrete choice experiments in health economics: a review of the literature. Health Econ 2012;21(2):145–72.
[48] Milte R, Huynh E, Ratcliffe J. Assessing quality of care in nursing homes using discrete choice experiments: how does the level of cognitive functioning impact upon older people's preferences? Soc Sci Med 2019;238:112466.
[49] Seghieri C, Mengoni A, Nuti S. Applying discrete choice modelling in a priority setting: an investigation of public preferences for primary care models. Eur J Health Econ 2014;15(7):773–85.
[50] Teahan Á, Walsh S, Doherty E, O'Shea E. Supporting family carers of people with dementia: A discrete choice experiment of public preferences. Soc Sci Med 2021;287(114359).
[51] Kuhfeld WF. Marketing research methods in SAS. SAS Inst Inc 2010.
[52] Huber J, Zwerina K. The importance of utility balance in efficient choice designs. J Mark Res 1996;33(3):307–17.
[53] Street DJ, Burgess L, Louviere JJ. Quick and easy choice sets: constructing optimal and nearly optimal stated choice experiments. Int J Res Mark 2005;22(4):459–70.
[54] Cannavò, L., & Frudà, L. (2007). Ricerca sociale. In *Dal progetto dell'indagine alla costruzione degli indici: Vol. Vol. 1*. Carocci editore.
[55] Hauber AB, González JM, Groothuis-Oudshoorn CGM, Prior T, Marshall DA, Cunningham C, IJzerman MJ, Bridges JFP. Statistical methods for the analysis of discrete choice experiments: A report of the ISPOR Conjoint Analysis Good research Practices Task Force. Value Health 2016;19(4):300–15.
[56] Belle N, Cantarelli P, Battaglio P. To consent, or not to consent? The publicness effect on citizens' willingness to grant access to personal data in the face of a health crisis. J Eur Public 2021. https://doi.org/10.1080/13501763.2021.1912147. Policy.
[57] Kleij KS, Tangermann U, Amelung VE, Krauth C. Patients' preferences for primary health care – a systematic literature review of discrete choice experiments. BMC Health v Res 2017;17:476.
[58] Cheraghi-Sohi S, Hole AR, Mead N, McDonald R, Whalley D, Bower P, Roland M. What patients want from primary care consultations: A discrete choice experiment to identify patients' priorities. Ann Fam Med 2008;6(2):107–15.
[59] Rubin G, Bate A, George A, Shackley P, Hall N. Preference for access to the GP: A discrete choice experiment. Br J Gen Pract 2006;56(531):743–8.
[60] Hole AR. Modelling heterogeneity in patients' preferences for the attributes of a general practitioner appointment. J Health Econ 2008;27(4):1078–94.
[61] Bonciani M, Barsanti S, Murante AM. Is the co-location of GPs in primary care centres associated with a higher patient satisfaction? Evidence from a population survey in Italy. BMC Health v Res 2017;17(1).
[62] Kerrissey MJ, Clark JR, Friedberg MW, Jiang W, Fryer AK, Frean M, Shortell SM, Ramsay PP, Casalino LP, Singer SJ. Medical group structural integration may not ensure that care is integrated, from the patient's perspective. Health Aff 2017;36(5):885–92.
[63] De Rosis S, Barchielli C, Vainieri M, Bellé N. The relationship between healthcare service provision models and patient experience. J Health Organ Manag 2021;36(9):1–24.
[64] van Schalkwyk MC, Bourek A, Kringos DS, Siciliani L, Barry MM, De Maeseneer J, McKee M. The best person (or machine) for the job: rethinking task shifting in healthcare. Health Policy (N Y) 2020;124(12):1379–86.
[65] Mutz D. Population-based survey experiments. Population-Based Survey Experiments. Princeton University Press; 2011.
[66] Coast J, Al-Janabi H, Sutton EJ, Horrocks SA, Vosper AJ, Swancutt DR, Flynn TN. Using qualitative methods for attribute development for discrete choice experiments: issues and recommendations. Health Econ 2012;21(6):730–41.
[67] Wordsworth S, Skåtun D, Scott A, French F. Preferences for general practice jobs: A survey of principals and sessional GPs. Br J Gen Pract 2004;54(507):740–6.