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Shared Decision-Making in Treatment Selection in Multiple Myeloma in Spain: The PRISMMA Study

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ABSTRACT

Introduction: Perceptions and experiences of shared decision-making between patients and physicians in multiple myeloma (MM) care are not fully understood. A survey study was conducted to explore these perspectives in Spain.

Methods: Two anonymous online surveys, one for haematologists and one for MM patients, were developed. Both included related questions on treatment goals, treatment options discussion and the decision-making process.

Results: In total, 72 haematologists and 76 MM patients completed the survey, including 23 in first-line treatment, 37 in second-line or later and 16 with no or unknown treatment line. The most common treatment goal for patients (67%) and haematologists (90%) was to prolong survival with a good quality of life. Becoming symptom-free was the second most important treatment goal for patients and haematologists, followed by extending survival over quality of life for patients and quality of life over survival for haematologists. Both groups agreed that minimising hospital visits was the least important treatment goal. While 92% of haematologists reported discussing treatment goals with their patients, 17% of patients reported having this discussion. Discordances between haematologists and patients emerged in perceptions of who made the final treatment decision.

Conclusion: While general agreement between patients and haematologists on extending survival with good quality of life was found for the main treatment goal, a need to align second treatment goals and improve the shared decision-making was identified. Addressing these differences is important to ensure the selection of the most appropriate treatment for the individual patient at each stage of their journey.

1 | Introduction

Multiple myeloma (MM) is a heterogeneous malignancy of monoclonal plasma cells, estimated to globally account for 1% of all cancers [1], and approximately 14% of all haematologic malignancies [2]. Between 2010 and 2016, age-adjusted MM incidence in Spain was found to be 4.09 cases per 100 000 individuals per year [3], comparable to rates seen in Australia and New Zealand (4.86 cases per 100 000 individuals), and North America (4.74 cases per 100 000 individuals) [2].

Over this period, MM survival rates in Spain improved steadily [3], particularly among patients under 70 years, reflecting significant therapeutic progress achieved over the

Abbreviations: AEAL, Spanish association of patients with Lymphoma, Myeloma and Leukaemia; LOT, line of treatment; MM, multiple myeloma; QoL, quality of life; RRMM, relapsed/refractory multiple myeloma; SD, standard deviation; SDM, shared decision-making; SEHH, Spanish Society of Haematology and Haemotherapy.

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past two decades [4]. Nevertheless, MM remains incurable, and most patients will eventually experience one or more relapses throughout their disease course [5], requiring multiple lines of therapy [6]. At relapse, treatment selection becomes complex, as no standard of care is established [7] and it requires careful consideration of various patient-, disease- and treatment-related factors, including patient fitness, relapse aggressiveness and prior treatments' effectiveness and toxicities [5].

Additionally, about 40% of the MM patient population does not meet the eligibility criteria of the clinical trials of specific treatments [8, 9], limiting the generalisability of trial results to these patient groups. Therefore additional factors such as effects on quality of life (QoL) or treatment convenience should be included in the discussion beyond assessing efficacy and safety [8]. In this context, shared decision-making (SDM) [10] is essential to ensure that all the prior factors are considered in light of the individual patients' preferences, values, and priorities. In this regard, relatively little is known about patients' preferences in terms of myeloma treatments, and even less about the preferred dynamics when decisions on patients' care need to be made. In the US, disparities have been observed in the perceptions and communication between physicians and patients, highlighting potential gaps that could benefit from the implementation of targeted communication tools and strategies aimed at enhancing dialogue [11].

Given the complexities inherent in this haematologic malignancy, understanding communication challenges between haematologists and patients is crucial for optimising treatment outcomes, and subsequently, patient satisfaction. This survey study aimed at exploring the patient and physician perspectives on treatment goals, available options and decision-making interactions to better understand how treatment decisions are reached in real-world myeloma care in Spain.

2 | Methods

2.1 | Study Design

This is a non-interventional cross-sectional analysis of anonymous survey data gathered to better understand the decision-making process for MM treatment in the real-world setting in Spain, with a focus on relapsing/refractory patients.

The study complied with Good Clinical Practice guidelines, the Declaration of Helsinki (1964, and amendments), and applicable local regulations.

2.2 | Survey Design and Administration

Data was collected between September 2024 and January 2025 through two anonymous online self-administered surveys, one tailored to the physicians and another to the patients. Prior to that, a scientific committee composed of two haematologists and two patients' representatives was set up to design and validate the questions included in both surveys. This resulted in 33 and 31 questions included in the physicians' and patients' surveys, respectively, with an expected average completion time of 20 min. The physician and patient surveys included questions aimed at enabling analysis of both perspectives and experiences across a range of aspects. This included treatment goals, decision-making process, communication approach and treatment information (please see Supporting Information, Section A, B, C and D for further detail on survey content and additional collected information). All survey questions were designated mandatory, requiring a response before the respondent was able to answer the next question or submit their completed survey.

The surveys were administered via EUSurvey (https://ec.europa.eu/eusurvey), an online platform aimed at creating and publishing forms available to the survey participants. EUSurvey allowed respondents to conveniently stop their incomplete survey and resume from where they left it off, and/or to edit their already submitted surveys, as needed. EUSurvey also guaranteed their privacy by allowing respondents to answer anonymously while blocking researchers from accessing the contact details of respondents.

2.3 | Survey Participants

Specialised physicians (haematologists) were invited to participate in the study by the Spanish Society of Haematology and Haemotherapy (Sociedad española de hematología y hemoterapia; SEHH), which reached out to the 3500 registered members (as of April 2024 [12]). Eligible haematologists were multiple myeloma specialists who treat at least eight multiple myeloma patients per year.

Patients were invited to participate in the study by the Spanish Association of patients with Lymphoma, Myeloma, and Leukaemia, (Asociación Española de Afectados por Linfoma, Mieloma, y Leucemia; AEAL), which approached its 3251 MM members. Eligible patients were active or symptomatic MM patients, and at least 18 years old at the time of the invitation to participate in the survey.

2.4 | Statistical Methods

This was a descriptive study with no prespecified hypotheses; thus, formal sample size calculations were not performed. Cochran's [13] modified formula for finite populations was used to calculate the minimum sample size of patients and physicians needed to estimate a statistic with a 90% confidence level and an acceptable 10% margin of error. To this end we used the estimated 2020 prevalence of 16 307 MM patients [14] and the 2017 EUROSTAT [15] rate of 5.17 haematologists per 100 000 population (total of 2853 haematologists) as the size of both populations in Spain. In both instances, each sample size needed to be a minimum of 68 to accurately reflect the entire population and derive insights for the study.

Statistical analysis began at the end of the survey period (January 2025). Continuous variables were described by mean, standard deviation (SD), median, first and third quartiles. Categorical variables were described by proportion and frequency in each

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category. Due to the overrepresentation of patients from the Community of Madrid, a subgroup analysis was carried out excluding this population to test the robustness of the results. Microsoft Office Excel was used for the statistical analysis of the survey data.

3 | Results

3.1 | Respondent Characteristics

A total of 72 haematologists across Spain completed the self-administered anonymous survey. Their demographic characteristics are summarised in Table S1. They had on average 20 years of clinical experience, and 83% treated other pathologies besides MM. Participating haematologists were well distributed within the country, with a higher proportion of respondents in the Community of Madrid ($n = 12$; 17%), Castilla and León ($n = 11$; 15%) and Andalucia ($n = 9$; 13%). Furthermore, 22 (31%) physicians reported treating MM patients from other regions (data not shown). According to the participating haematologists, the average relative frequency of patients under their care in their 1st, 2nd, 3rd and 4th or later line of treatment (LOT) was 35%, 25%, 15% and 10%, respectively (these percentages are mean estimates and may not total 100%).

Similarly, 76 MM patients completed the survey. Overall, self-reported mean (SD) age of the patients was 66.7 [10] years, 62% were female, and 36% completed a bachelor's degree as their highest level of education (Table S2). One quarter of patients were diagnosed with MM 1 to 2 years before their survey participation, 27% were diagnosed 3 to 5 years prior and 21% had a diagnosis more than 5 years prior. Almost half (48.6%) of the patient participants had relapsed and/or refractory disease, with 29%, 14% and 5% of them reporting to be in their 2nd, 3rd and 4th or after LOT, respectively. Community of Madrid was the most represented Autonomous Community within the patient population, with approximately 44% of patients residing and being treated there (data not shown).

3.2 | Treatment Goals

Patients and physicians were asked to rank treatment goals by order of importance, with a specific focus on the perspectives of physicians on relapsed/refractory patients and of the relapsed/refractory patients themselves. Most patients (67%; $n = 51$) identified 'Living as long as possible with a good quality of life' as their top treatment goal (Figure S1). This preference remained consistent across different lines of treatment, with 65% of patients ($n = 15$ out of 23 patients) in the 1st LOT, 77% ($n = 17$ out of 22 patients) in the 2nd LOT (1st relapse/refractory event) and 67% ($n = 10$ out of 15 patients) in the 3rd LOT or after (2nd relapse/refractory event and subsequent) selecting it as their primary therapeutic goal (data not shown). Similarly, approximately 90% of physicians also chose it as the most important treatment goal for their relapsing patients, regardless of the LOT (Figure 1).

For the second most important treatment goal, 41% ($n = 9$ out of 22) of patients in their first relapse/refractory event prioritised 'Not having disease symptoms for as long as possible', followed closely by 36% ($n = 8$ out of 22) who selected 'Living as long as possible, even if it means with a decreased quality of life'. A similar pattern was observed among patients after a second relapse/refractory event, though with slight variations in proportions (Figure 2). Aligned with this, 36% ($n = 26$ out of 72) of the haematologists also ranked 'Not having disease symptoms for as long as possible' as the second most important goal for their patients at first relapse/refractory event. In contrast, one quarter ($n = 18$ out of 72) of haematologists ranked 'Having a good quality of life, even if it means living a shorter time' as the second most important treatment goal in patients at first relapse/refractory event. This was also selected as the second most important goal by 35% of haematologists ($n = 25$ out of 72) when treating patients at second and later relapse/refractory event, before 'Not having disease symptoms for as long as possible' (selected by 29% of haematologists, $n = 21$ out of 72) (Figure 2).

The least important treatment goal selected by 57% of all participating patients ($n = 43$ out of 76) was 'Going to the hospital as little as possible'. This was consistent among relapsed and/or refractory patients in their 2nd and 3rd (or after) LOT (Figure 3), with 64% and 53% of patients sharing this view, respectively. Similarly, 53% and 49% of haematologists considered 'Going to the hospital as little as possible' the least important treatment goal for their patients during the 1st relapse/refractory event (2nd LOT) and 2nd or later relapses/refractory events (3rd LOT or after), respectively (Figure 3).

After excluding from the analysis those patients residing in the Community of Madrid, the results remained consistent (Figure S2); the remaining patients ranked the treatment goals in the same order of importance and with similar proportions.

3.3 | Treatment Options Presented

Regarding the number of treatment options, almost all (99%) haematologists reported offering multiple therapeutic choices to their MM patients (Figure S3), although 59% of them restricted these options to those deemed to be more adequate for their patients (data not shown). Among the participating haematologists, 55 (76%) stated all treatment options were explained in detail and in a similar manner, while 16 (22%) indicated that they provided a more detailed explanation for one treatment over the others (data not shown). In contrast, 83% of patients reported being presented with only one treatment option by their physician (Figure S3), and 65% stated that their physician did not provide a detailed explanation of any available treatments.

Of the 86% of haematologists who reported that their patients inquired about specific treatments, 14% were highly willing to consider patients' suggestions; 74% were willing; 11% were somewhat willing, with none reporting being unwilling. However, only a small number of patients ($n = 11$) reported asking about specific treatments, limiting further analysis on the patients' experience.

Regarding clinical trials, 93% of haematologists stated that they offered participation in clinical trials to patients they considered eligible. In contrast, 84% of patients reported not being offered the opportunity to participate in a clinical trial.

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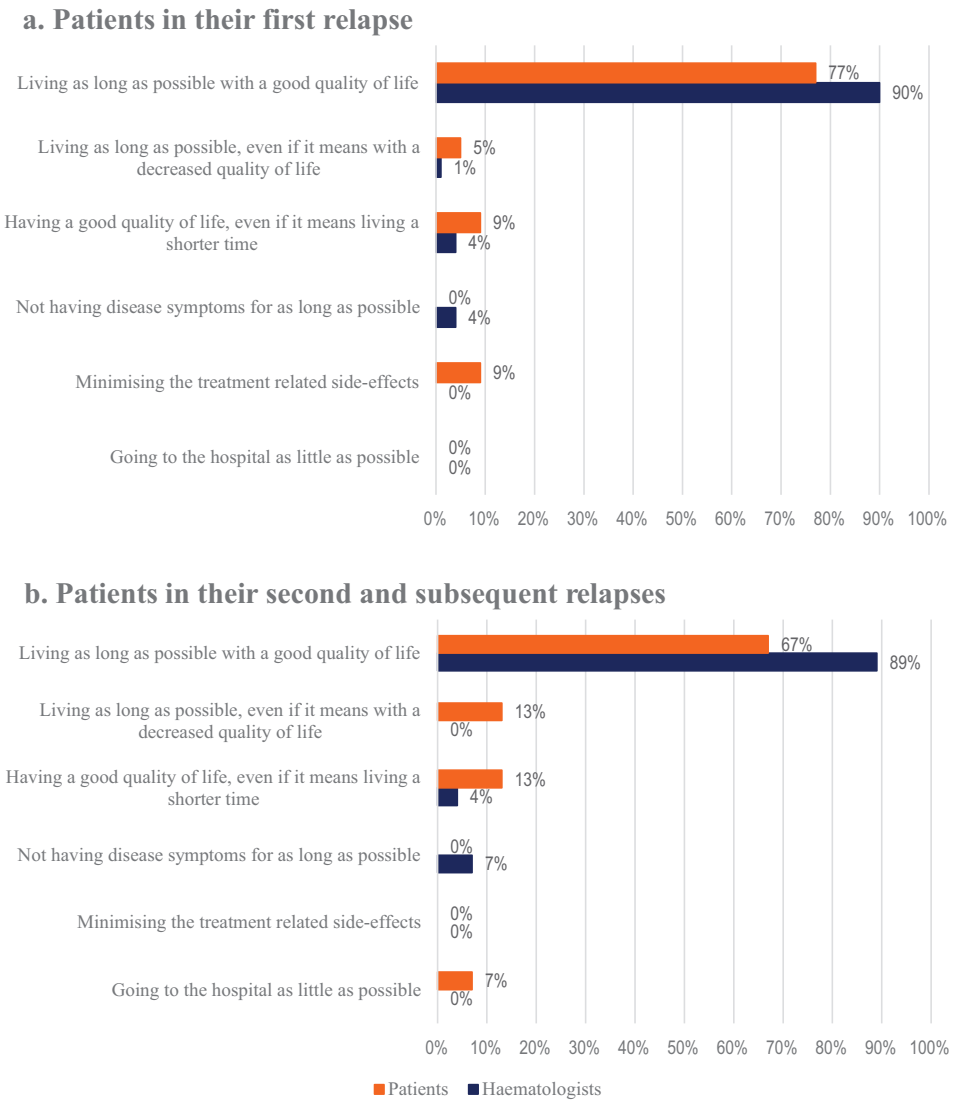

FIGURE 1 | First most important multiple myeloma treatment goal identified by patients (1st relapse/refractory event [$n = 22$], 2nd and subsequent relapses/refractory events [$n = 15$]) and haematologists ($n = 72$). (a) for patients in their 1st relapse/refractory event and (b) for patients in their 2nd and subsequent relapses/refractory events.

3.4 | Treatment Decision Dynamics and Patient Satisfaction

Sixty-six (92%) participating haematologists reported discussing the treatment goal with their patients and among these, 91% of haematologists reported having this conversation prior to treatment selection. Conversely, only 13 (17%) patients reported engaging in this conversation with their haematologist, and among these 69% of patients reported discussing the treatment goal prior to making their treatment decision.

In terms of patient involvement in treatment decisions, 75% of haematologists considered female patients to be involved, with 15% stating they were highly involved. Male patients were perceived as involved by 61% and highly involved by 4% of haematologists (Figure 4). Similarly, 42% and 58% of haematologists reported that patients with high education levels were involved and highly involved, respectively. In contrast, patients with lower education levels were viewed as involved (10%) or little involved (69%) by haematologists (Figure 4).

When asked about the treatment selection discussions, 99% of haematologists stated 'The physician makes sure that the patient understands all the information regarding his/her treatment options', followed by 50 (69%) and 42 (58%) haematologists additionally stating that 'The physician encourages the patient to participate in the treatment selection', and 'The physician explains that the patient can choose to do nothing or to discard any selected treatment', respectively (Figure 5). In contrast, 55% of patients reported that none of these were the usual output of the treatment selection discussion with their haematologist (Figure 5).

Most (85%) haematologists reported making the final treatment decision collaboratively with their patient, yet 65% of patients believed this decision was made solely by the physician (Figure 6). Nevertheless, most patients (80%) were satisfied with the final decision-making process (data not shown). Among the 20% ($n = 15$) who were dissatisfied, 87% expressed that they would have preferred shared decision-making for the final selection of their treatment (Figure S4).

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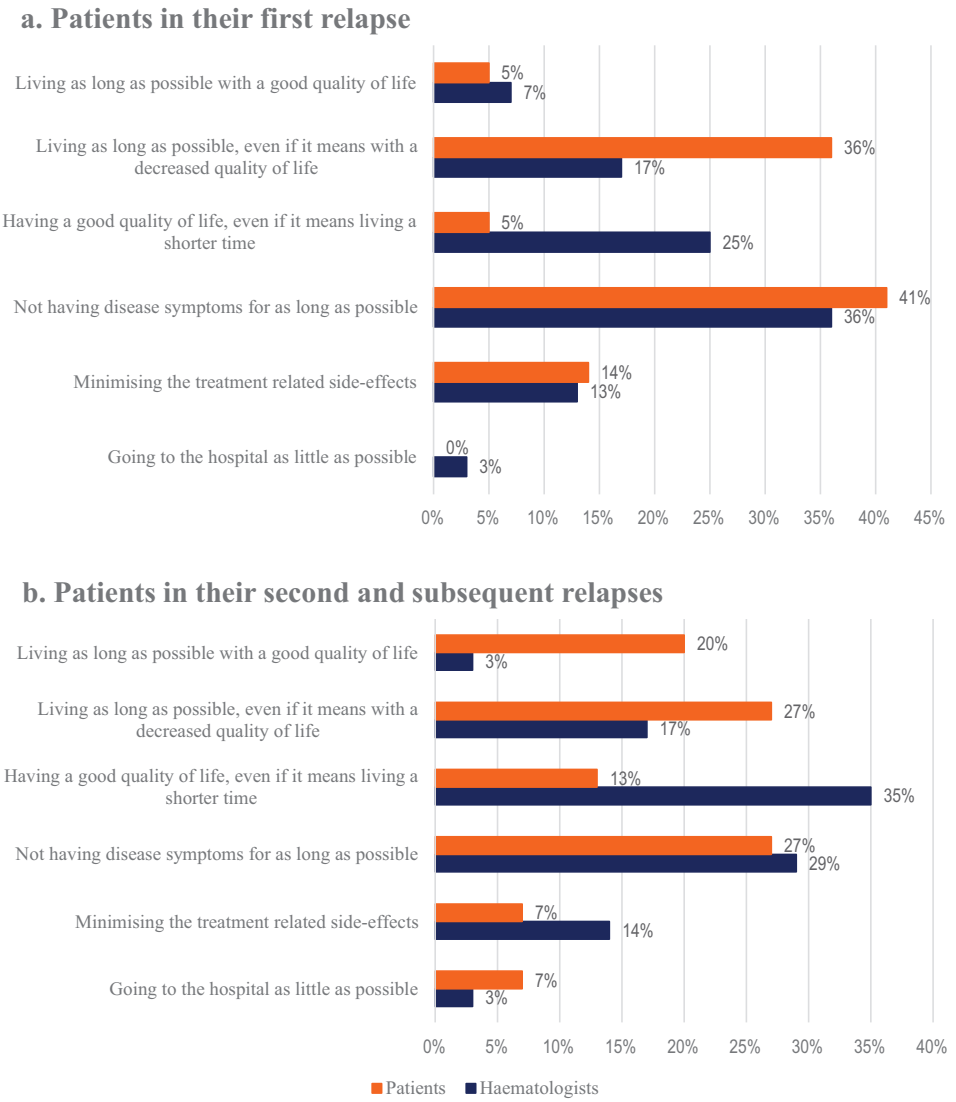

FIGURE 2 | Second most important multiple myeloma treatment goal identified by patients (1st relapse/refractory event [$n = 22$], 2nd and subsequent relapses/refractory events [$n = 15$]) and haematologists ($n = 72$). (a) for patients in their 1st relapse/refractory event and (b) for patients in their 2nd and subsequent relapses/refractory events.

When the decision of the final treatment was taken patients felt mainly worried (65% of patients), confident (33%) and hopeful (31%), and aligned with this 72% of haematologists perceived their patients felt as well worried, and 63% perceived them as fearful (Figure S5).

3.5 | Information: Availability, Sources and Patients' Comprehension

First-line patients MM patients were considered by haematologists to be poorly informed (38%) or not informed at all (35%), with only 28% of haematologists reporting very well-informed patients. In relapsed/refractory patients, the majority (56%) of haematologists considered them to be very well informed. However, patients' perceptions were that they felt poorly informed (35% in first LOT; 61% in relapsed/refractory patients). Around 25% of both 1st LOT and RRMM patients felt they were not informed at all about MM. The percentage of patients who felt very well informed dropped from 39% in the first LOT to 14% in RRMM.

Regarding information-seeking behaviour, 24% of patients reported actively looking for MM-related information, contrasting with 72% of physicians who believed their patients sought information. Among patients, the most common sources were patient associations (88%) and the internet (72%). Physicians, on the other hand, identified the internet (69%) and direct discussions with their physician (63%) as the primary sources of patient information. However, 85% of patients reported not receiving additional MM-related information from their physician, though 93% expressed a desire to receive it. In contrast, 57% of physicians stated that they do provide additional information.

In terms of treatment information comprehension, 89% of physicians considered it 'difficult' for patients to understand. This perception was confirmed by 54% of patients reporting it was 'difficult' for them, and 'extremely difficult' for 24% of patients.

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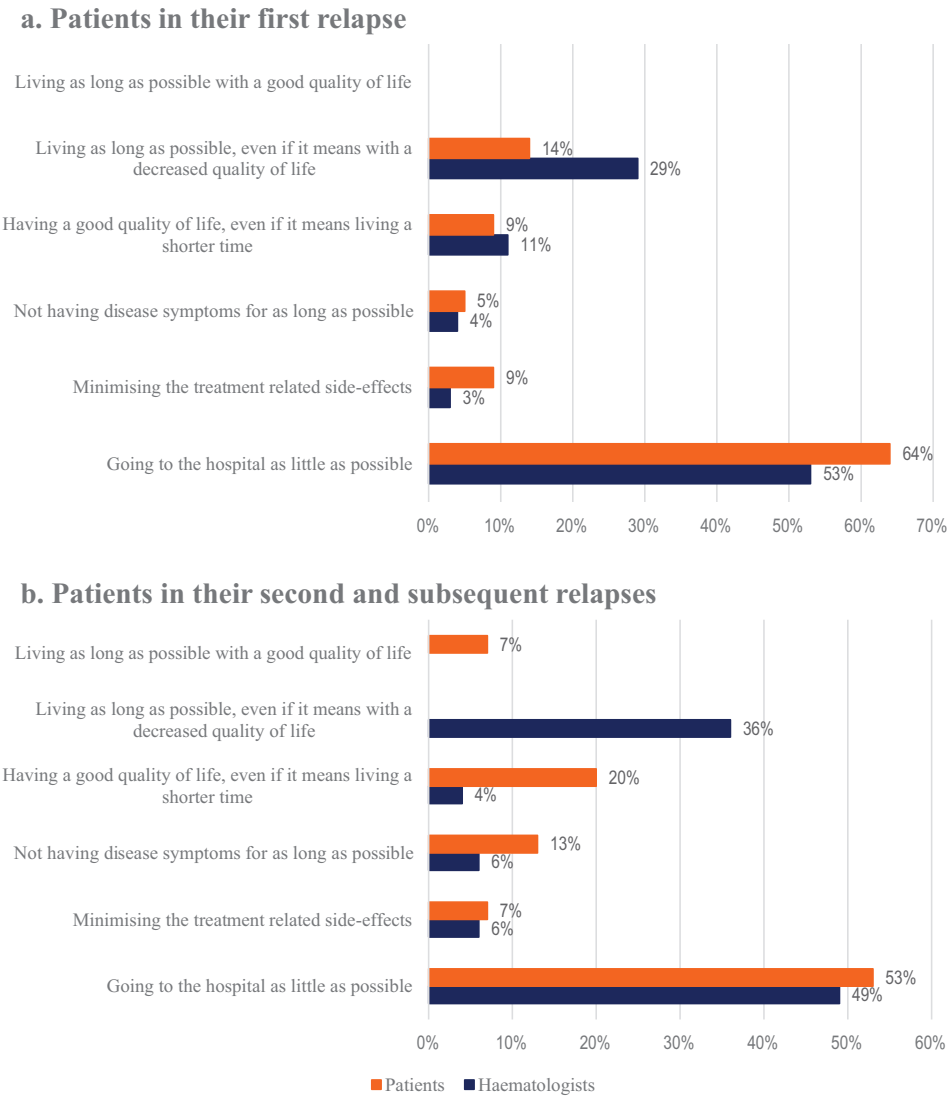

FIGURE 3 | Least important multiple myeloma treatment goal identified by patients (1st relapse/refractory event [$n = 22$], 2nd and subsequent relapses/refractory events [$n = 15$]) and haematologists ($n = 72$). (a) for patients in their 1st relapse/refractory event and (b) for patients in their 2nd and subsequent relapses/refractory events.

3.6 | Treatments Access and Equality

Nearly all participating haematologists (96%) reported that their hospital had access to all publicly funded MM treatments, although 30% noted that additional restrictions were imposed by their hospital or region (data not shown). In contrast, most patients (68%) were unsure whether their hospital had access to all publicly funded MM treatments, and 24% believed their hospital lacked some of them (data not shown).

Similarly, most haematologists (93%) indicated that MM was treated differently across hospitals in Spain, and this perception was shared by 56% of patients. The remaining 44% of patients were uncertain about this.

4 | Discussion

This study investigated, from a physician and patient perspective, the goals, access to information, and decision dynamics in the treatment selection for multiple myeloma in Spain. Despite the incremental transition to a healthcare model in which the patient is taking the centre stage, little attention has been paid to the experiences of patients and physicians when making shared decisions, particularly in the multiple myeloma setting. In this sense, this is, to our knowledge, the first study exploring MM treatment decision-making from the point of view of both the haematologists and the patients' population (including both first-line treatment and relapsing/refractory patients) in Spain.

A key finding of this study is the notable discordance in the patients and physicians' self-reported engagement in therapy intent discussions. While 92% of the physicians reported discussing MM treatment goals with their patients, only 17% of patients reported having these discussions with their healthcare provider. Similarly, nearly all haematologists reported offering multiple therapeutic choices to their MM patients, yet 83% MM patients reported being presented with only one option. Discrepancies between patients and physicians' recall of critical communications are not new [16–18], and previous studies have identified

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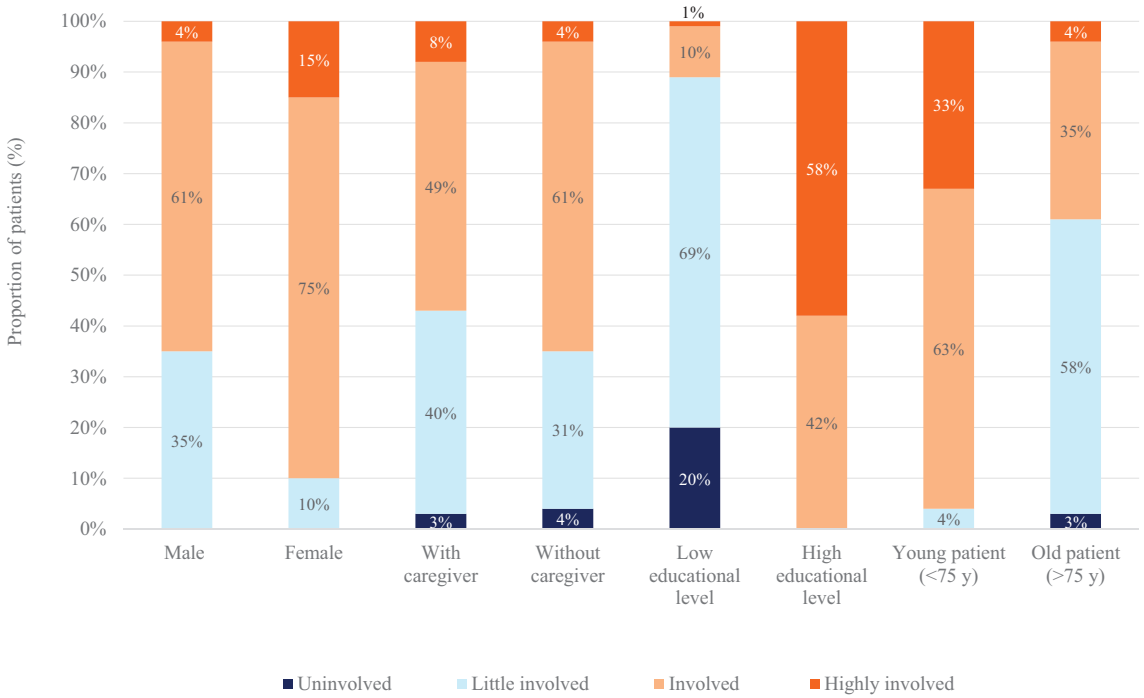

FIGURE 4 | Involvement of patients (%) in the multiple myeloma treatment decision-making based on their characteristics, as reported by the haematologists ($n = 72$).

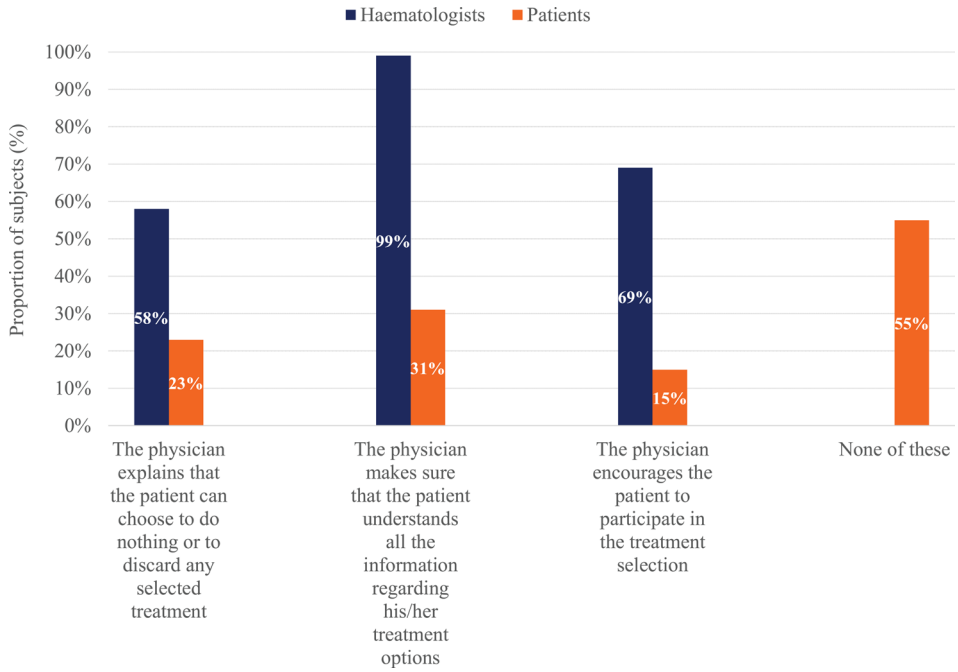

FIGURE 5 | Usual output of the treatment selection discussion between patients and haematologists (%), as reported by patients ($n = 76$) and haematologists ($n = 72$).

that, among others, the total amount of items discussed and low patient engagement due to the verbal dominance of the conversation by the physician are good predictors of patients' poor recall [16, 19]. The misalignment observed in communication perceptions highlighted an urgent need for structured strategies to foster more effective communication [18, 20]. Efforts should move beyond merely providing information, and towards establishing a mutual understanding of preferences. Implementing standardised communication frameworks or decision aids, such as structured conversation guides, visual treatment summaries, or digital tools that may help patients articulate their priorities, could facilitate more meaningful discussions [21, 22].

Additional findings confirmed that, as expected, patients and physicians were well aligned at individually identifying extended survival with a good quality of life as the primary

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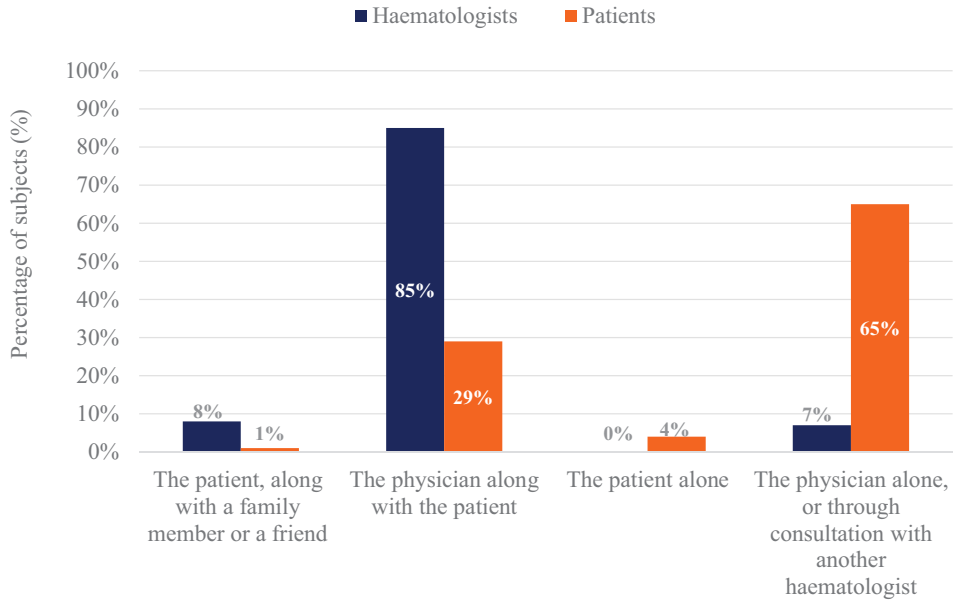

FIGURE 6 | Responses to 'Who usually makes the final decision on treatment for multiple myeloma?' from patients ($n = 76$) and haematologists ($n = 72$).

treatment goal, regardless of LOT. These treatment goals align with findings from three multinational studies, which similarly highlighted extending survival as the highest priority or most influential treatment feature in MM patients' treatment selection [23–25]. The same treatment attribute was highlighted as critical in chronic lymphocytic leukaemia [26], a closely related B-cell cancer. Additionally, a previous survey study reported that MM patients voiced efficacy (overall survival) and minimisation of potential side effects as critical treatment goals [11]. Patients in our study consistently prioritised being symptom-free as their second most important therapeutic goal, though a proportion of patients valued prolonging survival even at the expense of reduced quality of life. Similarly, many haematologists placed greater value in their first relapse/refractory event on patients being symptom-free as the second most important treatment aim. In contrast, for patients in their second or later relapse/refractory event, physicians favoured the patient having a good quality of life over extending survival. Previous studies had reported misalignments between patients and their haematologists when identifying what is most valuable to the MM patient. Divergence in these considerations can significantly influence the clinical orientation of a care episode eventually affecting the patient's treatment experience and outcome [27]. It underscores the essential need to regularly revisit and align treatment goals, particularly during relapse when patients' priorities often require reassessment [27].

Notably, this study marks the first time MM patients have consistently ranked treatment convenience related to hospital visits as the least important consideration, both in the first line of treatment and in the relapsing settings. Prior literature revealed that newly diagnosed MM patients valued more convenient modes of administration compared to relapsing patients [28]. Regimens that minimised hospital visits (e.g., all-orals vs. injectables) were generally associated with increased treatment convenience satisfaction [29]. Our patient population may benefit from in-person interactions and a network of regional clinical sites offering specialised treatments in the public healthcare setting, as outlined in the Cancer Strategy of the Spanish National Health System [30].

Nearly all participating haematologists stated that their hospital had access to all publicly funded treatments, yet they reported that MM treatment faced disparities across hospitals in Spain due to additional hospital/regional restrictions. Limited patients' awareness of hospital access to all funded treatments underscores an information gap that should be addressed.

Furthermore, this study highlighted discrepancies between patients and physicians in making the final decision for the treatment selection; while 85% of haematologists reported a collaborative process, 65% of patients felt the decision was unilaterally taken by their healthcare provider. This mismatch highlighted two conflicting perceptions; physicians considered themselves inclusive whereas patients felt consistently excluded from the decision process. Dissatisfied patients expressed their wish to feel empowered and co-responsible for the management of their myeloma through SDM. Nevertheless, most patients (80%) expressed satisfaction with the final decision-making process, suggesting that, in terms of the final treatment selection, they were in agreement with or trusted their haematologist taking the final decision.

Limitations to this study, descriptive in nature, include the generalisability of the results as the surveyed patients and haematologists were contacted through two patient and haematologist associations in Spain, and may systematically differ from those who were not approached and from those who chose not to respond [11]. Both patient and haematologist samples present varying demographics, healthcare settings and treatment practices across regions and institutions and may not accurately represent the views of the entire MM patient and haematologist populations in Spain, conflicting with the generalisability of the present results. Having said so, it is important to mention that

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this online administered survey was answered by 73% of patients aged 60 years and over, including 37% who were 70 years and more. This boosts our confidence that the study results may not be affected by the digital divide potentially associated with an online survey and that they closely reflect the perceptions of this typically aged population. Inherently to all survey data, self-reported data from patients and physicians may have introduced both recall bias and/or social desirability bias, as both populations may have forgotten important aspects of the treatment decision-making process and may have provided more acceptable answers associated with their patient/clinician role. Another limitation is that, by design, responding patients were not necessarily under the care of participating haematologists. However, we do not expect a differential account of the patients' and haematologists' experiences and perceptions because of this aspect, as similar frequencies in important characteristics (e.g., frequencies of patients by LOT, type of healthcare system) were reported by both patients and haematologists. Regarding geographic distribution, patients resided (and were treated) in a greater proportion in the Community of Madrid, compared to haematologists who were more evenly distributed across Spain, potentially overrepresenting the experiences of this specific region. The study design could not discern between relapsed or refractory patients, and only information on their line of treatment was collected. Finally, no standardised tool to assess the decision-making process was used in the present study, as MM presents unique characteristics in terms of challenges [20] and complexity in the treatment decision that fosters the use of alternative assessment methods [11]. Several strengths in the design of this study are identified. First, the assessed outcomes, communication aspects and survey administration were designed by a scientific committee that equally included haematologists and MM patient representatives. Second, haematologists were included if actively treating a minimum number of MM patients, promoting a timely account of their views and experiences in daily practice. This study describes the goals, access to information, and decision dynamics across all disease stages (i.e., newly diagnosed in first-line treatment, early relapse/refractory event and late relapse/refractory event), portraying the little changes observed over our population's disease journey. Future studies should validate the observed results in this Spanish population of haematologists and MM patients, ideally with a larger sample size, and include insights from additional stakeholders such as additional clinical staff (e.g., haematological nurses) and MM patients' caregivers, who may impact the treatment decision-making process. In addition, they should evaluate the effectiveness of structured communication interventions, such as conversation guides or decision aids, in improving alignment between patients' and physicians' treatment goals and perceptions of SDM in MM.

5 | Conclusions

This study highlighted the existent alignment on top priorities regarding treatment goals between physicians and MM patients. It also revealed a misalignment in perceptions about treatment goals discussions, therapeutic priorities and in the decision-making processes between both parties. Identifying and addressing these differences is important to ensure the selection of the most meaningful and valuable treatment for the individual patient at each stage of their journey with myeloma. Empowering the patient through SDM may impact the patients' satisfaction with the received care, the adherence to their treatment and their overall physical and psychological well-being.

Author Contributions

Valentín Cabañas: conceptualization, validation, writing – review and editing. **María Casanova:** conceptualization, validation, writing – review and editing. **Begoña Barragán:** conceptualization, validation, writing – review and editing. **Isabel López:** conceptualization, validation, writing – review and editing. **Anna Raya:** conceptualization, validation, writing – review and editing. **Belén Santiago-Josefat:** conceptualization, supervision, validation, data curation, methodology, formal analysis, writing – original draft, writing – review and editing.

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Ethics Statement

The study protocol was reviewed and approved by the Institutional Review Board at the Hospital Universitario Costa del Sol (Marbella, Spain) in July 2024.

Consent

The informed consent requirement for the study was waived by the same committee on the basis that this was an anonymous survey and was in alignment with the legal framework of Spain.

Conflicts of Interest

V.C. has received honoraria for lectures, consulting, and advisory boards from Johnson & Johnson, BMS, Sanofi, Amgen, Glaxo, Pfizer, BioGene, Menarini; travel grants from Johnson & Johnson, BMS, Amgen, BioGene; speakers' bureau participation for BMS; and financing of scientific research from Janssen. M.C. has received honoraria for consulting from Amgen. B.B. and I.L. declare no conflicts of interest. A.R. and B.S.-J. are employees of, and own stock in Amgen.

Data Availability Statement

Qualified researchers may request data from Amgen clinical studies. Further details are available at Amgen's website on Clinical Trial Data Sharing Requests.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Data S1:** Supporting Information.

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