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Patients' Attitudes Toward Deprescribing Among Adults with Chronic Diseases in Saudi Arabia

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Abstract

Background: In Saudi Arabia, chronic illnesses are one of the biggest healthcare issues. They are frequently associated with polypharmacy, which can raise the risk of medication burden and adverse drug events. The goal of deprescribing is to cut back on or stop prescription drugs that are not needed under therapeutic supervision. Understanding patients' perspectives on deprescribing is essential to promote shared decision-making and improve medication safety. **Objective:** This study assessed attitudes toward deprescribing among adults with chronic diseases in Saudi Arabia. The study also examined their willingness to discontinue medications and identified demographic and clinical factors associated with personal willingness to deprescribe. **Method:** Analytical cross-sectional study among adults with chronic diseases in Saudi Arabia. Data were collected through an electronic survey using the validated Arabic version of the revised Patients' Attitudes Towards Deprescribing (rPATD) questionnaire. The study included 332 participants. Participants' characteristics and attitudes toward deprescribing were summarized using descriptive statistics. Chi-square tests and regression analyses were then used to explore factors related to willingness to deprescribe. **Results:** More than half of the participants (52.4%) were willing to deprescribe medications. However, this percentage increased to 85.8% when stopping medication was recommended by their physician. In unadjusted analyses, personal willingness was significantly associated with polypharmacy, lower educational attainment, and higher numbers of chronic conditions and medications. In multivariable binary logistic regression, greater perceived medication burden (aOR = 2.51, 95% CI: 1.78–3.53) and lower educational attainment (aOR = 1.81, 95% CI: 1.04–3.12) were associated with greater personal willingness to try deprescribing. Neither the number of chronic conditions nor the number of medications was significantly associated with willingness after adjustment. Participants with polypharmacy reported greater medication burden and lower satisfaction with their medications. Participants reported high involvement in medication-related decision-making. **Conclusions:** Saudi adults with chronic diseases generally showed positive attitudes toward deprescribing, particularly when supported by physician recommendations. Greater perceived medication burden was consistently associated with personal willingness to deprescribe, whereas the association with educational attainment was sensitive to outcome categorization.

Keywords: deprescribing; polypharmacy; medication burden; shared decision-making; chronic diseases; Saudi Arabia

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1. Introduction

Chronic diseases are long-term conditions that commonly require ongoing healthcare and medication management [1]. In Saudi Arabia, diabetes, cardiovascular diseases, cancer, and chronic respiratory diseases pose a substantial public health burden. In 2019, these four major chronic diseases were responsible for approximately 51% of all deaths, with cardiovascular diseases alone accounting for 35.7%. Furthermore, the number of diabetes cases increased by 99%, from 1.4 million in 2009 to 2.7 million in 2019 [2].

The increasing burden of chronic diseases often necessitates the long-term use of multiple medications, increasing the likelihood of polypharmacy. Polypharmacy, commonly defined as the regular use of five or more medications, is prevalent among older adults and individuals with multiple chronic conditions [3]. In a nationally representative survey of community-dwelling Saudi adults aged 60 years or older, 51.5% experienced polypharmacy, with diabetes and hypertension among the associated factors [4]. Although the use of multiple medications may be clinically appropriate, polypharmacy is associated with adverse drug events, medication nonadherence, potentially inappropriate medication use, increased healthcare utilization, and reduced quality of life. Moreover, the risk of adverse drug events generally increases as the number of medications used increases. Regular medication review and deprescribing unnecessary medications are therefore recommended to reduce medication-related risks and treatment burden [3,5].

Deprescribing is a systematic process of reducing or discontinuing medications when their existing or potential harms outweigh their benefits within the context of the patient's clinical condition, treatment goals, values, and preferences [6,7]. It is a supervised, patient-centered intervention that involves reviewing current medications, assessing their benefits and harms, prioritizing medications for discontinuation, implementing an appropriate withdrawal plan, and monitoring the patient for beneficial or adverse outcomes [6,7].

Successful deprescribing depends substantially on patients' willingness to discontinue medications and their trust in healthcare professionals. Patients may be reluctant to deprescribe because they believe that their medications remain necessary, fear withdrawal effects or symptom recurrence, have experienced unsuccessful discontinuation in the past, or receive insufficient information and support. Conversely, concerns about adverse effects and medication burden may increase their willingness to stop a medication. A clear discontinuation plan, appropriate tapering, follow-up by healthcare professionals, and the option to restart treatment when clinically necessary may further facilitate acceptance of deprescribing [7,8].

Evidence, predominantly from older populations, indicates substantial interest in deprescribing. A systematic review and meta-analysis found that 84% of patients were willing to discontinue at least one medication if their physician considered it possible [9]. Similarly, in a recent study across 14 countries, 81% of older adults reported that they would be willing to stop one or more medications if their physician said it was possible. However, only 48% wanted to try stopping one medication to assess how they felt without it, and 44% identified a specific medication they wanted to stop or reduce [10]. These findings distinguish general willingness based on a physician's recommendation from patients' own interest in initiating deprescribing. A longitudinal Swiss study found limited evidence that baseline willingness predicted actual medication changes over 12 months, although greater concerns about stopping were associated with a higher medication count [11]. Willingness may also vary according to patients' clinical conditions and medication-related perceptions [12].

Given the complexity of patients' views toward medication discontinuation, validated instruments are needed to assess the different factors influencing deprescribing decisions. The revised Patients' Attitudes Towards Deprescribing (rPATD) [9,13,14] questionnaire

evaluates patients' perceptions across four domains: medication burden, perceived appropriateness of medications, concerns about stopping, and involvement in medication-related decision-making. It also includes global items assessing willingness to discontinue medications and satisfaction with current treatment [13].

Although previous studies in Saudi Arabia have investigated patients' attitudes toward deprescribing, their populations have primarily included hospital-based patients, older adults, or individuals experiencing polypharmacy [14,15]. Consequently, evidence concerning deprescribing attitudes among adults with chronic diseases across a broader age range remains limited. Furthermore, an important distinction exists between patients' personal willingness to initiate medication discontinuation and their willingness to do so following a physician's recommendation. Examining these two dimensions may provide a more nuanced understanding of patients' readiness to engage in deprescribing discussions. In addition, identifying whether subjective medication burden or clinical characteristics are associated with personal willingness may help inform patient-centered medication reviews.

Therefore, this study aimed to assess attitudes toward deprescribing among adults with chronic diseases in Saudi Arabia using the Arabic rPATD questionnaire. Specifically, it sought to (1) characterize attitudes across the four rPATD domains; (2) distinguish personal willingness to try stopping a medication from willingness following a physician's recommendation; and (3) identify sociodemographic, clinical, and medication-related attitudinal factors associated with personal willingness to deprescribe.

2. Methods

2.1. Study Design

An analytical cross-sectional study was conducted among adults with chronic diseases in Saudi Arabia to assess their attitudes toward deprescribing and identify factors associated with their willingness to try stopping a medication. Ethical approval was obtained from the Research Ethics Committee at Taif University (Approval No. [47-098]).

2.2. Study Setting

Participants were recruited through convenience sampling via an electronic survey distributed on social media platforms and WhatsApp groups in Saudi Arabia. The study used a non-probability convenience sampling strategy because it sought to recruit adults with chronic diseases from the community rather than restrict participation to patients attending a particular healthcare institution. Electronic distribution through social media platforms provided a practical approach to reach participants across different locations and age groups. Data were collected from 12 December 2025 to 16 March 2026. The inclusion criteria were: (1) 18 years or older, (2) had been diagnosed with at least one chronic disease, and (3) were taking at least one chronic medication. Eligibility was determined from participants' self-reported responses to the electronic questionnaire.

Of 1409 survey submissions, 26 did not provide consent, 989 reported no chronic disease, 39 failed to meet other eligibility criteria, and 23 had incomplete responses, leaving 332 participants for analysis. The survey was configured to prevent multiple submissions from the same device.

2.3. Sample Size

The minimum required sample size was calculated using the Raosoft sample size calculator [16]. Based on an estimated population of approximately 5.19 million adults with chronic diseases in Saudi Arabia [17], a 95% confidence level, a 5% margin of error, and a 50% expected response distribution, the minimum required sample size was 385 participants. Because the study employed nonprobability convenience sampling, the calculated sample

size was treated as a recruitment benchmark rather than as a guarantee of population representativeness or a specific margin of error.

2.4. Study Instrument

Data were collected using a self-administered electronic questionnaire comprising two sections. The first section collected sociodemographic and clinical information, including age, gender, educational level, marital and employment status, health insurance coverage, the number of chronic diseases, and the number of medications taken regularly. For the latter, participants were asked to report the number of medications they had taken regularly over the preceding four weeks, including prescription and nonprescription medications and supplements. Medication count was therefore based on self-reported regular use over the four-week reference period. Polypharmacy was operationally defined as the regular use of five or more medications during this period.

The second section comprised the validated Arabic version of the revised Patients' Attitudes Towards Deprescribing (rPATD) questionnaire [18]. The questionnaire assesses four domains: medication burden, perceived medication inappropriateness, concerns about stopping medications, and involvement in medication-related decision-making. It also contains two global items assessing willingness to discontinue one or more medications if recommended by a physician (G1) and satisfaction with current medications (G2).

All rPATD items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Domain scores were calculated as the mean of the corresponding items according to the rPATD scoring instructions. Higher scores indicated greater perceived medication burden, greater perceived medication inappropriateness, greater concerns about stopping medications, and greater involvement in medication-related decisions. Higher G1 and G2 scores indicated greater willingness to deprescribe and greater satisfaction with current medications, respectively.

2.5. Statistical Analysis

All data analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, summarized participants' demographic and clinical characteristics and questionnaire responses. The four rPATD domain scores were calculated as the mean of their constituent items. Higher scores represented greater perceived burden, greater perceived medication inappropriateness, greater concern about stopping medications, and greater involvement in medication-related decision-making, respectively. The global items were analyzed separately and were not included in the four domains. No reverse coding was performed on any item. Internal consistency for the rPATD domains was assessed using Cronbach's alpha.

Exploratory subgroup analyses were conducted to compare rPATD domain scores with sociodemographic and clinical characteristics using independent *t*-tests (i.e., two groups) and one-way ANOVA (i.e., more than two groups). Where overall age-group differences were statistically significant, Tukey's honestly significant difference (HSD) post hoc test was used to identify pairwise differences between age categories. To account for multiple testing, the Benjamini–Hochberg false discovery rate (FDR) procedure was applied across all subgroup comparisons.

Item A2, "I would like to try stopping one of my medicines to see how I feel without it", assessed participants' personal willingness to try to stop a medication. Agreement with A2 was selected as the primary outcome for the logistic regression. Therefore, A2 responses were dichotomized into agree (strongly agree or agree) and disagree/unsure (unsure, disagree, or strongly disagree). Bivariate analyses examined associations between

patients' willingness to try stopping medications (i.e., dichotomized A2) and their sociodemographic and clinical characteristics. The chi-square test was used for categorical variables, and Mann–Whitney U tests for continuous variables (i.e., number of chronic diseases and number of medications), as these variables were skewed.

Two multiple binary logistic regression models were employed to identify factors associated with personal willingness to try stopping a medication (i.e., A2). Model 1 included patients' characteristics (i.e., gender, education, marital status, age category, number of medications, and number of chronic conditions). Model 2 additionally included perceived medication burden, concerns about stopping medications, and involvement in medication-related decisions. Multicollinearity among the independent variables was assessed using variance inflation factors (VIFs), with values below 5 considered indicative of the absence of severe collinearity. Model adequacy was evaluated by examining linearity in the logit, influential observations, calibration using the Hosmer–Lemeshow test, and discrimination using the area under the receiver operating characteristic curve (AUC). Potential departures from linearity were further examined using cubic spline sensitivity analyses.

Polypharmacy status was not included alongside medication count because it was derived directly from the same variable. The perceived appropriateness domain was excluded because item A2 is one of its constituent items, thereby avoiding overlap between the dependent variable and the independent predictor. To assess the robustness of dichotomizing item A2, a sensitivity analysis was conducted using ordinal logistic regression with the original five-point response scale and the same covariates as the extended binary logistic regression model. The proportional-odds assumption was assessed using a likelihood-ratio test comparing the proportional-odds model with a less restrictive multinomial logistic regression model. The number of outcome events relative to model complexity was also evaluated. Among the 332 participants, 174 met the primary binary outcome definition (agreement or strong agreement with item A2), while 158 did not. The extended multivariable logistic regression model included 11 slope parameters, yielding approximately 15.8 events and 14.4 non-events per parameter. These ratios were considered when assessing the potential for model overfitting.

3. Results

A total of 332 participants met the inclusion criteria and were included in the final analyses. The mean age was 44.29 ± 17.49 years. Over half of participants were 45 years or older (n = 179, 53.9%), female (n = 182, 54.8%), had post-secondary education (n = 219, 66%), and had no medical insurance (n = 255, 76.8%; Table 1). The average number of chronic medical conditions per participant was 2.11 ± 1.39, and the average number of medications was 3.41 ± 2.51. Polypharmacy was present in 24.1% of the participants (Table 1). The most frequently reported chronic conditions were diabetes mellitus (50.3%), hypertension (42.8%), and dyslipidemia (31.9%). Supplementary Table S1 provides the distribution of self-reported chronic disease types to further characterize the study population.

Internal consistency for the rPATD domains was acceptable to good. Cronbach's alpha was 0.747 for burden, 0.856 for appropriateness, 0.786 for concerns about stopping, and 0.769 for involvement. Mean scores for rPATD domains in Table 2 indicated moderate levels of perceived medication burden (3.23 ± 0.93), appropriateness (3.24 ± 1.07), and concern (3.08 ± 0.95). Higher appropriateness scores indicate lower perceived appropriateness of current medications. In contrast, participants reported relatively high involvement in medication-related decisions (4.20 ± 0.74), willingness to stop medications if medically appropriate (4.31 ± 0.95), and overall satisfaction with their current medications (3.74 ± 1.18; Table 2).

Table 1. Sociodemographic characteristics of the participants (n = 332).

Variable	Frequency (%)
Age	
18–29	95 (28.6%)
30–44	58 (17.5%)
45–59	116 (34.9%)
≥60	63 (19.0%)
Gender	
Male	150 (45.2%)
Female	182 (54.8%)
Educational level	
Up to secondary	113 (34.0%)
Post secondary	219 (66.0%)
Marital status	
Single/Previously Married	121 (36.4%)
Married	211 (63.6%)
Region *	
Western	227 (68.4%)
Northern	55 (16.6%)
Southern	20 (6%)
Central	13 (3.9%)
Eastern	13 (3.9%)
Medical insurance	
Yes	77 (23.2%)
No	255 (76.8%)
Currently Employed	
Yes	121 (36.4%)
No	211 (63.6%)
Polypharmacy	
Yes	80 (24.1%)
No	252 (75.9%)

* 4 missing values.

Table 2. Mean Scores for rPATD Domains Among Participants.

Variable	Mean ± SD
Burden	3.23 ± 0.93
Appropriateness	3.24 ± 1.07
Concern	3.08 ± 0.95
Involvement	4.20 ± 0.74
Global Question 1-Willingness to stop medication (s) if recommended by the doctor	4.31 ± 0.95
Global Question 2-Overall satisfaction	3.74 ± 1.18

For the appropriateness domain, higher scores reflect lower perceived medication appropriateness.

Exploratory subgroup analyses identified several differences in attitudes toward deprescribing across demographic and clinical characteristics. After applying the Benjamini–Hochberg false discovery rate correction to all subgroup comparisons, 11 associations remained statistically significant. These included differences by age in perceived medication burden, perceived appropriateness, willingness to stop medications following physician advice, and satisfaction with current medications; by marital status in perceived appropriateness and willingness to stop medications; by insurance status in satisfaction; and by polypharmacy status in perceived burden, appropriateness, willingness to stop medications, and satisfaction. Several associations that were statistically significant before adjustment,

particularly those involving gender, did not remain significant after correction. Complete unadjusted and FDR-adjusted results are presented in Supplementary Table S2.

The rPATD item A2, "I would like to try stopping one of my medicines to see how I feel without it," was dichotomized. Bivariate analyses, presented in Table 3, showed that participants with up to secondary-level education had significantly higher agreement to stop one medication than those with post-secondary education ($p = 0.042$). Similarly, participants with polypharmacy were more likely to express willingness to try stopping a medication than those without polypharmacy (70.0% vs. 46.8%, $p < 0.001$). Participants willing to try deprescribing had a higher median number of chronic conditions (2 [IQR: 1–3] vs. 1 [IQR: 1–2], $p = 0.002$) and medications (3 [IQR: 2–5] vs. 2 [IQR: 1–4], $p = 0.003$) compared with those who were unwilling or unsure.

Table 3. Bivariate Analysis of Factors Associated with Willingness to Try Stopping One of Their Medications.

Variable	Category	Agree n (%)	Disagree/Unsure n (%)	*p*-Value
Age group	18–29	43 (45.3%)	52 (54.7%)	0.089
	30–44	33 (56.9%)	25 (43.1%)	
	45–59	59 (50.9%)	57 (49.1%)	
	≥60	39 (61.9%)	24 (38.1%)	
Gender	Male	83 (55.3%)	67 (44.7%)	0.333
	Female	91 (50.0%)	91 (50.0%)	
Education	Up to Secondary	68 (60.2%)	45 (39.8%)	0.042
	Post-Secondary	106 (48.4%)	113 (51.6%)	
Marital/Social status	Single/previously married	57 (47.1%)	64 (52.9%)	0.143
	Married	117 (55.5%)	94 (44.5%)	
Health insurance	Insured	36 (46.8%)	41 (53.2%)	0.257
	Not insured	138 (54.1%)	117 (45.9%)	
Employment	Employed	61 (50.4%)	60 (49.6%)	0.581
	Not employed	113 (53.6%)	98 (46.4%)	
Polypharmacy (≥5 medications)	Yes	56 (70.0%)	24 (30.0%)	<0.001
	No	118 (46.8%)	134 (53.2%)	
Number of chronic conditions median (IQR)		2 (1–3)	1 (1–2)	0.002
Number of medications median (IQR)		3 (2–5)	2 (1–4)	0.003

Two multivariable binary logistic regression models were fitted to identify factors associated with personal willingness to try deprescribing (Table 4). In Model 1, lower educational attainment was significantly associated with greater willingness (aOR = 1.66, 95% CI: 1.01–2.74; $p = 0.047$). In Model 2, which additionally adjusted for medication-related perceptions, lower educational attainment (aOR = 1.81, 95% CI: 1.04–3.12; $p = 0.034$) and greater perceived medication burden (aOR = 2.51, 95% CI: 1.78–3.53; $p < 0.001$) were significantly associated with willingness. Medication count and number of chronic conditions were not statistically significant in either model.

In the ordinal logistic regression sensitivity analysis (Supplementary Table S3), perceived medication burden (aOR = 2.36, 95% CI: 1.79–3.12; $p < 0.001$) and concerns about stopping medication (aOR = 1.40, 95% CI: 1.08–1.81; $p = 0.010$) remained significantly associated with greater willingness to deprescribe. However, the association with lower education was no longer statistically significant (aOR = 1.35, 95% CI: 0.87–2.10; $p = 0.185$). The global likelihood-ratio test did not identify statistically significant evidence against

the proportional-odds assumption (χ^2 (33) = 44.88, $p = 0.081$), supporting the use of the proportional-odds ordinal logistic regression model as a sensitivity analysis.

Table 4. Multivariable Logistic Regression Models of Factors Associated with Agreement with Item A2 (Personal Willingness to Try Stopping One Medication).

	Model 1			Model 2		
Variable	**Adjusted Odds Ratio (aOR)**	**95% CI**	***p*-Value**	**Adjusted Odds Ratio (aOR)**	**95% CI**	***p*-Value**
Gender						
Male	1.06	0.66–1.71	0.801	1.19	0.71–1.99	0.514
Female	Reference					
Age						
18–29	1.78	0.67–4.77	0.248	2.28	0.77–6.71	0.135
30–44	2.01	0.84–4.80	0.118	1.92	0.75–4.92	0.175
45–59	1.11	0.54–2.29	0.768	1.33	0.60–2.94	0.479
≥60	Reference					
Education						
Up to secondary education	1.66	1.01–2.74	0.047	1.81	1.04–3.12	0.034
Post-secondary education	Reference					
Social status						
Single/previously married	0.64	0.31–1.31	0.224	0.64	0.3–1.39	0.262
Married	Reference					
Number of medications	1.11	0.93–1.32	0.238	1.06	0.88–1.27	0.542
Number of chronic diseases	1.24	0.92–1.68	0.165	1.16	0.84–1.61	0.379
Burden	-	-	-	2.51	1.78–3.53	<0.001
Concern	-	-	-	1.28	0.96–1.71	0.092
Involvement	-	-	-	0.94	0.66–1.34	0.736

Diagnostic analyses showed no evidence of severe multicollinearity (all VIFs < 5), with maximum VIF values of 3.92 and 3.94 for Models 1 and 2, respectively. The models showed no significant lack of fit on the Hosmer–Lemeshow test ($p = 0.335$ and 0.696, respectively), while Model 2 showed better apparent discrimination (AUC = 0.756 versus 0.629). Although potential nonlinearity was identified for medication and chronic disease counts, spline sensitivity analyses did not significantly improve model fit ($p = 0.109$), and the principal associations remained consistent. Influence diagnostics did not identify observations with exceptionally large Cook's distances.

4. Discussion

In this cross-sectional study of 332 adults with chronic diseases in Saudi Arabia, participants showed relatively high involvement in medication-related decisions, willingness to deprescribe medications if recommended by their doctor, and satisfaction with their current treatment. In contrast, perceived medication burden, perceived inappropriateness of current medications, and concerns were moderate. More than half of participants expressed willingness to try deprescribing one medication, and this willingness was significantly associated

with lower educational attainment, polypharmacy, and higher numbers of chronic diseases and medications. In the multivariable binary logistic regression, lower educational attainment and greater perceived medication burden were associated with personal willingness to try deprescribing, although the education association was not statistically significant in the ordinal sensitivity analysis. Medication count and number of chronic conditions were not independently associated with willingness in either binary model. These findings suggest that although patients generally support physician-guided deprescribing, medication burden and patient characteristics may influence their personal readiness to consider deprescribing. Although participants aged ≥ 60 years demonstrated the highest unadjusted willingness to try deprescribing, the direction of the age-group associations changed after multivariable adjustment. However, none of these adjusted associations was statistically significant, and the findings should therefore be interpreted cautiously.

Participants reported a high involvement score (4.20 ± 0.74), reflecting self-reported understanding of their medications and interest in medication-related decisions. This score should not be taken as an objective measure of medication knowledge. In Saudi research, involvement was independently associated with physician-guided willingness in both the Riyadh outpatient study and the western-region study; the latter reported an involvement score of 3.95 ± 0.66 [15,19]. Similarly, a Malaysian study of ambulatory patients with chronic diseases found that greater involvement in treatment, greater perceived appropriateness of deprescribing, and stronger trust in physicians were associated with greater willingness to deprescribe, whereas greater concerns about stopping medication were associated with lower willingness [20]. These findings support inviting patients to discuss their treatment goals and concerns during medication review, while avoiding the assumption that a high involvement score necessarily predicts acceptance of a particular deprescribing recommendation.

Satisfaction with current treatment was also relatively high: the mean score was 3.74 ± 1.18, and 64.4% agreed or strongly agreed that they were satisfied with their medications. Previous Saudi studies reported satisfaction of 43.0% among hospital outpatients and 80.7% among older inpatients, while the 14-country study reported 82% [10,14,15]. Satisfaction and willingness to deprescribe can coexist because a person may value current treatment while accepting that an individual medication could become unnecessary or unsuitable. Nevertheless, the multinational study found that greater satisfaction was associated with lower odds of identifying a specific medication for discontinuation or dose reduction [10]. Thus, general willingness should be distinguished from readiness to discontinue a particular treatment.

Despite this openness, concerns about stopping remained evident. The mean concerns score was 3.08 ± 0.95, similar to the 3.11 ± 0.74 reported in western Saudi Arabia [19]. More than half of participants were reluctant to stop a medication taken for a long time, and approximately half reported stress when medications were changed. Greater concerns about stopping medications were independently associated with lower physician-guided willingness to deprescribe (aOR = 0.54; 95% CI, 0.39–0.75) [19]. In a Swiss longitudinal study, higher baseline concerns scores were associated with an increase in medication count over 12 months, whereas baseline willingness was not significantly associated with subsequent medication changes [11]. These findings caution against treating hypothetical willingness as evidence that deprescribing will occur. Medication reviews should address specific concerns and, where appropriate, include an individualized plan for discontinuation or tapering, with follow-up to assess the need for further treatment.

Following adjustment for multiple comparisons using the Benjamini–Hochberg false discovery rate procedure, several differences in attitudes toward deprescribing remained statistically significant across demographic and clinical subgroups. Age was associated with

perceived medication burden, perceived appropriateness, physician-guided willingness to stop medications, and satisfaction with current treatment. Older participants generally reported greater perceived medication burden and inappropriateness, higher physician-guided willingness, and lower medication satisfaction compared with younger participants. Portuguese studies reported an association between older age and physician-guided willingness, whereas the Riyadh outpatient study found no independent association with age [13,15]. Similarly, a recent Western Saudi study found that participants aged 50 years or older were more willing to deprescribe when recommended by a physician than younger participants (aOR = 1.72; 95% CI, 1.05–2.82; $p = 0.031$).

However, age was not significantly associated with personal willingness to try deprescribing in the present study. These differences may reflect variation in age categories, participant characteristics, recruitment settings, and the distinction between physician-guided willingness and personal willingness to try deprescribing. After FDR adjustment, gender-related associations were no longer statistically significant, suggesting that the differences observed in the unadjusted analyses should be interpreted cautiously. Additional associations involving marital status and insurance status remained significant after correction, although their clinical relevance requires further investigation. Given the exploratory nature of these analyses, the findings should be regarded as hypothesis-generating rather than evidence of causal relationships.

Participants with polypharmacy reported greater perceived medication burden and perceived medication inappropriateness, higher physician-guided willingness to deprescribe, and lower satisfaction with their medications compared with participants without polypharmacy. These differences remained statistically significant following FDR adjustment, suggesting that the observed associations were not solely attributable to the large number of subgroup comparisons. Unadjusted analyses also showed similar patterns with increasing numbers of medications and chronic conditions, although no statistically significant associations were observed for concerns about stopping medications or involvement in medication-related decisions. Similarly, a Jordanian study of 501 patients with polypharmacy found that more than 70% perceived their medications as a burden and preferred their prescribers to initiate deprescribing [21]. These findings suggest that patients experiencing greater treatment burden may be particularly receptive to discussions about medication reduction. Nevertheless, the associations observed in this cross-sectional study do not establish causality, and perceived medication inappropriateness should not be equated with clinically assessed prescribing appropriateness. Overall, patients with polypharmacy may recognize a greater need for treatment simplification while continuing to rely on healthcare professionals to guide deprescribing decisions.

Physician-guided willingness in the present study was broadly consistent with previous Saudi findings, including 90% among adults attending hospital outpatient clinics and taking at least three prescribed medications, 87.7% among older inpatients with polypharmacy, and 79.4% among adults using prescribed medications in western Saudi Arabia [14,15,19]. Internationally, a meta-analysis estimated willingness at 84% (95% CI, 81–88%), although substantial heterogeneity limits direct comparisons [9]. Lower willingness was reported in rural China, where 55.2% of participants with multimorbidity would stop medication if their physician agreed [22]. Differences in participant characteristics, recruitment settings, and healthcare contexts may contribute to this variation, but these cross-study comparisons cannot determine their relative contributions.

Importantly, physician-guided willingness (85.8%) was considerably higher than participants' personal willingness to try stopping a medication (52.4%). A similar distinction was observed in the multinational study by Vidonscky Lüthold et al. (2025), in which 81% were willing to discontinue a medication if their physician considered it possible, com-

pared with 48% who expressed personal interest in trying medication discontinuation [10]. This distinction highlights the importance of differentiating between willingness to follow a healthcare professional's recommendation and patients' own interest in initiating deprescribing discussions. Although professional guidance may influence deprescribing decisions, the present study did not directly examine the reasons underlying this difference.

In the present study, personal willingness to try deprescribing was significantly associated with polypharmacy, lower educational attainment, and greater numbers of chronic conditions and medications in the unadjusted analyses. However, in the multivariable binary logistic regression, only lower educational attainment (aOR = 1.81, 95% CI: 1.04–3.12; $p = 0.034$) and greater perceived medication burden (aOR = 2.51, 95% CI: 1.78–3.53; $p < 0.001$) remained statistically significant. Importantly, the association with educational attainment was not statistically significant in the five-category ordinal sensitivity analysis (aOR = 1.35, 95% CI: 0.87–2.10; $p = 0.185$), whereas perceived medication burden remained significantly associated with willingness (aOR = 2.36, 95% CI: 1.79–3.12; $p < 0.001$). These findings suggest that perceived medication burden was a more consistent correlate of willingness to deprescribe, while the association with educational attainment was sensitive to how willingness was categorized. Nevertheless, the association between perceived medication burden and willingness to deprescribe should be interpreted in light of potential conceptual overlap, as both measures reflect participants' subjective medication-related experiences and attitudes. Although the burden domain does not directly assess willingness to discontinue medication, the cross-sectional, self-reported nature of these measures precludes causal interpretation.

The association between educational attainment and willingness to deprescribe has been inconsistent across previous studies [9,23,24]. Some studies have reported greater willingness among patients with lower educational attainment [25], whereas others have found greater willingness among those with higher education [26], or no significant association [13,27]. These differences may partly reflect variations in how willingness was assessed. While the present study examined participants' personal interest in trying to stop a medication, other studies assessed willingness when deprescribing was recommended or approved by a physician [13,25–27] or proposed by a pharmacist [28]. Moreover, educational attainment may not adequately reflect patients' health literacy, medication knowledge, or socioeconomic circumstances. These factors, together with trust in healthcare professionals and previous deprescribing experiences, were not directly assessed in the present study and may have influenced the observed association. A Jordanian study, for example, reported associations between eHealth literacy and attitudes toward deprescribing [29]. Therefore, the relationship between educational attainment and personal willingness to deprescribe should be interpreted cautiously, particularly because it was not maintained in the ordinal sensitivity analysis.

These findings highlight the potential role of community pharmacists in identifying patients experiencing medication burden and facilitating patient-centered deprescribing discussions. Collaboration between pharmacists and physicians may be particularly valuable given the greater willingness observed when deprescribing was physician-guided. Future studies should evaluate the effectiveness of such collaborative approaches.

5. Limitations

This study has several limitations. Its cross-sectional design means it cannot establish causal relationships, and participants' reported willingness may not translate into actual medication discontinuation or discontinuation of specific medications in clinical practice. Because the findings were based on self-reported responses, response and social desirability biases are possible. The sample size fell below the target minimum, and the convenience

sampling approach using social media, along with the uneven geographic distribution, limited sample representation and the generalizability of the findings. Although the Arabic rPATD has demonstrated acceptable psychometric properties in previous research, this study did not establish its measurement equivalence across younger and older adult populations. Moreover, recruitment through social media platforms may have introduced selection bias by targeting individuals with internet access and digital literacy, potentially underrepresenting older adults with limited digital literacy and internet access. Although information on self-reported chronic disease types was available, the study did not collect detailed clinical information on disease duration, severity, or medication classes, limiting our ability to examine associations with deprescribing attitudes.

Furthermore, the study did not comprehensively assess health literacy, medication knowledge, socioeconomic circumstances, or trust in healthcare professionals, limiting interpretation of the association between educational attainment and willingness to deprescribe. Additionally, eligibility criteria and clinical characteristics were based on self-reported information without independent verification. Consequently, participants may have underreported the number of chronic conditions and medications.

6. Conclusions

Adults with chronic diseases in Saudi Arabia generally reported positive attitudes toward deprescribing, particularly when discontinuation was recommended by their physician. Although 52.4% were personally willing to try deprescribing one of their medications, 85.8% were willing to do so if their doctor said it was possible, highlighting the importance of professional reassurance and shared decision-making. Greater perceived medication burden was consistently associated with personal willingness to try deprescribing across binary and ordinal regression analyses, whereas the association with lower educational attainment was observed only in the binary models. Neither medication count nor the number of chronic conditions was significantly associated with willingness in the multivariable binary models.

Participants with polypharmacy also reported greater medication burden and lower satisfaction in subgroup analyses. These findings support the integration of patient-centered medication reviews into routine chronic disease care, particularly for patients experiencing substantial medication burden or polypharmacy. Further longitudinal and interventional studies are needed to determine whether reported willingness translates into safe and sustained deprescribing in clinical practice.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/healthcare14234007/s1. Table S1: Distribution of self-reported chronic disease types among study participants; Table S2: Comparison of rPATD Domain Scores Across Participant Characteristics; and Table S3: Ordinal logistic regression sensitivity analysis of factors associated with personal willingness to try deprescribing, are provided as Supplementary Material.

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