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IN THIS ISSUE



- Climate Change Project
- Telemedicine and COVID-19 Pandemic
- Gamete Donation for Artificial Insemination
- Paediatric Gastrointestinal Endoscopy
- Monkeypox Surveillance
- Abdominal Massage in Pregnancy
- Deprescribing Polypharmacy
- Survival in Childhood Cancer
- Secondary Hypothyroidism

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ORIGINAL RESEARCH

The Attitude of Older Patients to Deprescribing Polypharmacy in Ogun State, Nigeria

Saka SA*¹, Odueke DO¹, Odusan O², Oyinloye OE³, Okunye OL⁴

¹Department of Clinical Pharmacy and Bio-Pharmacy, Olabisi Onabanjo University, Sagamu Campus, Ogun State Nigeria

²Department of Medicine, Obafemi Awolowo College of Health Sciences, Olabisi Onabanjo University, Sagamu, Nigeria

³Department of Pharmacology and Toxicology, Faculty of Pharmacy, Sagamu Campus, Ogun State, Nigeria

⁴Department of Pharmaceutical Microbiology, Faculty of Pharmacy, Olabisi Onabanjo University, Sagamu, Nigeria

*Correspondence: Dr SA Saka, PMB 2022, Sagamu, Ogun State, Nigeria.
E-mail: ajibola.saka@oouagoiwoye.edu.ng; ORCID - <https://orcid.org/0000-0001-5521-4282>.

Abstract

Background: Deprescribing has been suggested as a beneficial intervention to reduce polypharmacy among older patients. However, little is known about the willingness to accept this intervention among patients in resource-limited settings.

Objective: To evaluate the attitudes of older patients to deprescribing polypharmacy.

Methods: A quantitative, cross-sectional survey was carried out among consecutively selected ambulatory patients aged ≥ 65 years who were on ≥ 5 chronic medications in two secondary healthcare facilities in Ogun State, southwest Nigeria. The 22-item revised Patients Attitude Towards Deprescribing questionnaire was used to evaluate the participants' attitudes toward deprescribing, while another ten-question tool explored participants' sociodemographic and clinical data. Logistic regression was used to determine factors associated with willingness to deprescribe among the participants using the global question, "If my doctor said it was possible, I would be willing to stop one or more of my regular medicines".

Results: Out of the 341 participants, the majority were females (60.7%), and 90.0% were on 5-7 medications. About three-quarters (71.8%) strongly agreed or agreed that they would be willing "to stop one or more of their medicines if the doctor said it was possible". Female gender and caregivers' involvement in medication management were significantly associated with participants' willingness to accept deprescribing ($p = 0.07$ and $p = 0.01$).

Conclusions: Most participants were willing to accept the deprescribing of their medications. Female gender and caregivers' involvement in medication management were predictive factors for the participants' willingness to accept deprescribing.

Keywords: Attitude, Clinical, Deprescribing, Gender, Intervention, Older Person.

Introduction

Polypharmacy, defined as the utilisation of five or more medicines concurrently or within 24 hours, is associated with increased healthcare costs, morbidity and fatality among older persons globally. [1] Deprescribing medications have been suggested as a beneficial intervention

to reduce this therapy problem. Deprescribing is a structured process of deliberate cessation or reduction in medication dosage in older persons based on the currently available evidence, monitored by a health care professional and within the framework of an individual patient's care goal and preference. [2] Many benefits of individualised deprescribing interventions have

been reported in the literature, including decreasing mortality, improving medication adherence and increasing patients' involvement in medication therapy management. [3, 4] However, patients' preferences must be considered for deprescribing to be effective. [5]

The revised Patient's Attitude Towards Deprescribing (rPATD) questionnaire is a validated questionnaire developed in Australia as an exploratory research tool. [6] However, it has been applied in many other countries and healthcare settings. [7-9] It evaluates patients' attitudes, beliefs, and experiences about deprescribing medications. Studies that have used the questionnaire reported varying degrees of the willingness of older people to have their medications deprescribed. [10] Nigeria is the home to the largest population of older people in sub-Saharan Africa (SSA). [11] However, similar to many SSA countries, the management of chronic diseases and chronic medications are initiated at the secondary healthcare (SHC) with referral to tertiary healthcare (THC) for complicated conditions. This is because the management of chronic diseases has yet to be integrated into primary healthcare (PHC) in these countries. [12] It is believed that medication issues are related to access and affordability in many SSA, including Nigeria. Researchers, therefore, often tend to downplay the burden of polypharmacy in such countries.

However, a recent review suggests that, like developed countries, polypharmacy constitutes a significant burden to older persons in Nigeria. [13] Many older people in the country are on polypharmacy with the attendant adverse clinical, economic and humanistic outcomes. The adverse economic effects include increased national health expenditure and escalating medication costs, majorly borne by older patients. [12] Conceivably, deprescribing polypharmacy may be impactful for older patients in Nigeria. However, there needs to be more information about older patients' perceptions of deprescribing in SSA. Therefore, little is known about patients' perceptions in SHC, where most chronic medications are initiated and most patients are managed. This study aimed to examine the attitude of older

patients towards deprescribing medications in SHC hospitals in southwest Nigeria.

Methods

Study design and setting

A quantitative, cross-sectional study using a validated interviewer-administered questionnaire was carried out among older patients that attended the medical outpatient (MOP) units of two secondary healthcare facilities in Ogun State. These facilities included the Sacred Heart Hospital (SHH), Lantoro and State Hospital Ijaye (SHI). The SHH provides an array of qualitative secondary healthcare services and is accredited for training healthcare professionals. It is also an accredited centre for National Health Insurance Scheme (NHIS) services. The SHI is a public secondary healthcare institution with many medical specialists and is a referral centre for many primary healthcare centres in the state.

Sample size determination

The sample size was estimated using the formula described by Charan and Biswas. [14] From the hospital records of the two hospitals, the total population of older patients attending the facilities was 1502 (SHH=775, SHI=727), a 50% response distribution, a power of 95% and a 5% margin of error were factored into the sample size determination. A minimum sample size of 307 was calculated, rounded to 338, with a 10% non-response rate.

Participants

Consecutively sampled older ambulatory patients aged 65 years and above who were on at least five chronic medications (polypharmacy), irrespective of the diagnosis, were recruited. Data collection was done between 15 November 2021 and 14 January 2022. Eligible participants with severe physical and cognitive impairments and those not available at the time of the study were excluded from this study.

Ethical considerations

The study was granted ethical approval by the Ethics Committees of the Olabisi Onabanjo University Teaching Hospital, Sagamu and Sacred Heart Hospital, Abeokuta, with certificate

numbers OOUTH/HREC/453/2021AP and SHH/EC/EA/08/09/21, respectively. All the participants gave written informed consent before inclusion in the study. Permission to conduct the study was obtained from the heads of the hospitals. The study was conducted under the Helsinki declaration.

The survey instrument and data collection techniques

The survey instrument was a 32-item questionnaire comprising ten self-reported sociodemographic and clinical data of the participants and the 22-item rPATD questionnaire. [6] The 5-point Likert scale from "strongly agree" to "strongly disagree" initially used by the developer of the rPATD questionnaire was retained in line with the agreement reached with the article's author. The rPATD questionnaire consists of four main domains (the Burden factor, Appropriateness factor, Concern about stopping factor and Involvement factor) with five items under each domain. It also has two additional global questions. The original questionnaire was translated into Yoruba, the local language predominantly spoken by the city's people, by a certified translator and back-translated into English. The questionnaire was pre-tested among 25 older patients who were subsequently excluded from the main study. With the assistance of medical record officers, the medical records of older patients attending outpatient medical clinics were screened for eligibility. The eligible patients were approached for enrolment into the study by the researchers, and those that consented were recruited into the study. All participants gave written informed consent. The researchers were present every clinic day to administer the questionnaire and clarify questions.

Outcomes measured

The primary outcome evaluated in the study was the willingness of older patients to deprescribe medications. This was measured by a global question in the rPATD "If my doctor said it was possible, I would be willing to stop one or more of my regular medicines". The secondary outcome was older patients' attitudes towards

deprescribing. The sociodemographic and clinical characteristics of the participants were the predictive variables.

Statistical analysis

The data were manually cleaned and checked for consistency before being fed into the Statistical Product and Services Solution version 23 (IBM, Corp.). Data were screened for normality using the Kolmogorov-Smirnov test and were analysed using descriptive statistics, including frequency and percentage. The Mann-Whitney U-test was used to compare gender-based differences in responses on the Concern for stopping factor. Logistic regression was conducted to determine the factors independently associated with willingness to deprescribe using the global question, "If my doctor said it was possible, I would be willing to stop one or more of my regular medicines". A p-value less than 0.05 was considered statistically significant.

Results

Sociodemographic characteristics

Of the 382 questionnaires distributed, 350 (91.6%) were retrieved, but only 341 (89.3%) were analysed and reported in this study. The remaining nine copies (2.3%) were excluded due to missing data. Of the 341 participants (SHH_n = 169; SHI_n = 172), the majority were aged 65-69 years (207; 60.7%), married (327; 95.9%) and were on 5-7 medications (307; 90.0%). The mean number of medications the participant took was 5.95±0.49 (Range = 5 to 12). Most participants (253; 74.2%) had their medications managed by their family members (Table I).

Participants' willingness to deprescribe medications

In the burden factor, almost three-quarters of the participants (247; 72.4%) strongly agreed or agreed that they "spent a lot of money on their medications". In the appropriateness factor, 39.0% (133/341) strongly agreed or agreed that they would like their doctors to reduce the doses of one or more of their medications.

Table I: Sociodemographic characteristics, medical and medications history (n = 341)

Variable	Frequency	Total (%)
Age Group (Years)		
65-69	207	60.7
70-74	88	25.8
75-79	37	10.9
≥80	9	2.6
Gender		
Male	134	39.3
Female	207	60.7
Highest Educational Level		
No Formal Education	89	26.1
Primary	82	24.1
Secondary	113	33.1
Post-secondary	57	16.7
Marital Status		
Single	14	4.1
Married	327	95.9
Employment Status		
Not Employed	72	21.1
Full Time	108	31.7
Part-Time	81	23.7
Retired	80	23.5
Social Support		
None	7	2.1
Religious	8	2.3
Family & Friends	323	94.7
Non-Governmental Organisation	3	0.9
Number of Medications		
5-7	307	90.0
8-10	29	8.5
>10	5	1.5
Medication management		
Self-Managed	72	21.1
Family Members	253	74.2
Caregivers	16	4.7
Number of chronic diseases		
Single chronic disease	158	46.3
Two chronic diseases	31	9.1
Multi-morbidity	152	44.6
Perceived General Health Status		
Poor	2	0.6
Fair	70	20.5
Good	192	56.3
Very Good	66	19.4
Excellent	11	3.2

Responding to the concern factors, many participants (162; 47.5%) strongly disagreed or disagreed that they “would be reluctant to stop a medicine they had been taking for a long time”. More than two-thirds of the participants (233; 68.3%) strongly agreed or agreed that they “get stressed whenever changes are being made to their medicines”. In the Involvement Factors domain, about a quarter (92; 27.0%) would like to

be involved in making decisions about medicines with their doctors. Responding to the general questions, 245 (71.8%) strongly agreed or agreed that they “would be willing to stop one or more of their regular medications if their doctor said it was possible”. Overall, the majority (307; 90.0%) were satisfied with their current medications (Table II)

Table IIa: The respondents’ perspectives of factors (burden and appropriateness factor) that can influence deprescribing (n=341)

Statement	SA n (%)	A n (%)	N n (%)	D n (%)	SD n (%)
Burden factor					
I spent a lot of money on my medicines	75 (22.0)	172 (50.4)	39 (11.4)	34 (10.0)	21 (6.2)
Taking my medicines every day is very inconvenient	25 (7.3)	106 (31.1)	80 (23.5)	100 (29.3)	30 (8.8)
I feel that I am taking a large number of medicines	50 (14.7)	116 (34.0)	57 (16.7)	78 (22.9)	40 (11.7)
I feel that my medicines are a burden to me	37 (10.9)	49 (14.4)	59 (17.3)	128 (37.5)	68 (19.9)
Sometimes I think I take too many medicines	51 (15.0)	123 (36.1)	47 (13.8)	79 (23.2)	41 (12.0)
Appropriateness factor					
I feel that I may be taking one or more medicines that I no longer need	23 (6.7)	52 (15.2)	66 (19.4)	118 (34.6)	82 (24.0)
I would like to try stopping one of my medicines to see how I feel without it	13 (3.8)	120 (35.2)	87 (25.5)	65 (19.1)	56 (16.4)
I would like my doctor to reduce the dose of one or more of my medicines	12 (3.5)	121 (35.5)	103 (30.2)	65 (19.1)	40 (11.7)
I think one or more of my medicines may not be working	8 (2.3)	20 (5.9)	55 (16.1)	109 (32.0)	149 (43.7)
I believe one or more of my medicines may be currently giving me side effects	11 (3.2)	53 (15.5)	26 (7.6)	99 (29.0)	152 (44.6)

SA- Strongly agreed, A - Agreed, N - Neutral, D - Disagreed, SD - Strongly disagreed.

There was a gender-based difference in the participants' opinions regarding the statement "If one of my medicines was stopped, I would be worried about missing out on future benefits", with more male gender tending to disagree or disagree (Z value = -3.195, p = 0.001). There was no statistically significant difference in the participants' opinions regarding the statement, "I get stressed whenever changes are made to my medicines" (Z value = -1.129, p = 0.259) (Table III).

Table IV depicts the logistic regression results of various predictive factors. Female gender (p = 0.007) and caregivers' management of participants' medications (p = 0.01) were associated with willingness to deprescribe among the participants (Table IV).

Discussion

Deprescribing is an attempt to optimise older patients' medication regimens and reduce the

burden of polypharmacy. However, deprescribing may not be effective if patients do not accept the intervention. This study found that the majority of the participants, despite being pleased with their current medications, were willing to accept the deprescribing of one or more of their medications if their doctors said it was possible. This result is consistent with the finding of a review of a similar study.^[10] Compared with studies from similar resource-limited settings, the proportion of older patients willing to deprescribe in this study is higher than reported among Nepalese^[9] but lower than among older Ethiopian patients.^[8] The difference in local healthcare systems and socio-cultural factors may partly account for these variations.^[15]

In the present study, the proportion of respondents that agreed to the question "I would like to try stopping one of my medicines to see how I feel without it" was not marginally different from those that indicated disagreement. This contradicts their responses to the global question, where the majority stated willingness to discontinue some medications.

Table IIb: The respondents' perspectives of factors (concerns about stopping and involvement) that can influence deprescribing (n=341)

Statement	SA n (%)	A n (%)	N n (%)	D n (%)	SD n (%)
Concerns about the Stopping factor					
I would be reluctant to stop a medicine that I had been taking for a long time	38 (11.1)	98 (28.7)	43 (12.6)	96 (28.2)	66 (19.4)
If one of my medicines was stopped, I would be worried about missing out on future benefits	57 (16.7)	84 (24.6)	69 (20.2)	99 (29.0)	32 (9.4)
I get stressed whenever changes are made to my medicines	51 (15.0)	182 (53.4)	35 (10.3)	57 (16.7)	16 (4.7)
If my doctor recommended stopping a medicine, I would feel that he/she was giving up on me	7 (2.1)	43 (12.6)	111 (32.6)	79 (23.2)	101 (29.6)
I have a bad experience when stopping a medicine before	9 (2.6)	96 (28.2)	71 (20.8)	97 (28.4)	68 (19.9)
Involvement factor					
I have a good understanding of the reasons I was prescribed each of my medicines	47 (13.8)	187 (54.8)	27 (7.9)	51 (15.0)	29 (8.5)
I know exactly what medicines I am currently taking, and I keep an up-to-date list of my medicines	28 (8.2)	117 (34.3)	84 (24.6)	86 (25.2)	26 (7.6)
I like to know as much as possible about my medicines	29 (8.5)	94 (27.6)	135 (39.6)	60 (17.6)	23 (6.7)
I like to be involved in making decisions about my medicines with my doctors	19 (5.6)	73 (21.4)	134 (39.3)	75 (22.0)	40 (11.7)
I always ask my doctor, pharmacist, or other healthcare professionals if there is something I don't understand about medicines	51 (15.0)	169 (49.6)	87 (25.5)	26 (7.6)	8 (2.3)
General questions					
If my doctor said it was possible, I would be willing to stop one or more of my regular medicines	130 (38.1)	115 (33.7)	52 (15.2)	35 (10.3)	9 (2.6)
Overall, I am satisfied with my current medicines	144 (42.2)	163 (47.8)	30 (8.8)	4 (1.2)	0 (0)

SA - Strongly agreed, A - Agreed, N - Neutral, D - Disagreed, SD - Strongly disagreed.

A similar observation has been reported by Weir *et al.* in their review of patients' attitudes towards deprescribing. [10] In the present study, the majority expressed Concern about the possibility of missing out on future benefits of the medication if one of the medications were deprescribed. This finding is in line with other studies in low- and middle-income countries. [8,9] This result indicates the emphasis of the healthcare workers on the therapeutic benefits of medications to the participants, overtime and the less education of the patients on the possibility of deprescribing such medications in the future when it is no longer necessary or beneficial.

About a quarter of the participants would like to be engaged in making decisions concerning their medications with their doctors. Weir *et al.* [16] and Chung *et al.* [17] had earlier reported that not all patients desire to be engaged in shared decision-making, preferring to trust their doctors with the decisions on their medications. The patients' trust in clinicians could influence deprescribing in both ways: either as an enabler or a barrier. [18,19] However, it has been observed that active engagement of patients in shared decision-making can assist clinicians to deprescribe effectively. [9]

Table III: Association between the perception of concerns factors and gender

Variable	Strongly agreed n (%)	Agreed n (%)	Neutral n (%)	Disagree d n (%)	Strongly disagreed n (%)	Mean Rank	Z-value	Mann-Whitney p-value
I would be reluctant to stop a medicine I had been taking for a long time.								
Male	9 (2.6)	41 (12.0)	14 (4.1)	34 (10.0)	36 (10.6)	158.81	-2.203	0.028
Female	29 (8.5)	57 (16.7)	29 (8.5)	62 (18.2)	30 (8.8)	180.19		
If one of my medicines was stopped, I would be worried about missing out on future benefits								
Male	28 (8.2)	41 (12.0)	25 (7.3)	33 (9.7)	7 (2.1)	191.63	-3.195	0.001
Female	29 (8.5)	43 (12.6)	44 (12.9)	66 (19.4)	25 (7.3)	157.65		
I get stressed whenever changes are made to my medicines								
Male	22 (6.4)	63 (18.5)	13 (3.8)	27 (7.9)	9 (2.6)	164.14	-1.129	0.259
Female	29 (8.5)	119 (34.9)	22 (6.4)	30 (8.8)	7 (2.1)	175.44		
If my doctor recommended stopping a medicine, I would feel that he/she was giving up on me.								
Male	1 (0.3)	25 (7.3)	36 (10.6)	35 (10.3)	37 (10.8)	175.23	-0.663	0.507
Female	6 (1.8)	18 (5.2)	75 (22.0)	44 (12.9)	64 (18.8)	168.26		
I have a bad experience when stopping a medicine before								
Male	6 (1.8)	39 (11.4)	23 (6.7)	45 (13.2)	21 (6.2)	177.09	-0.948	0.343
Female	3 (0.9)	57 (16.7)	48 (14.1)	52 (15.2)	47 (13.8)	167.06		

Table IV: Factors independently associated with willingness to deprescribe medications (Global Question 1)

Dependent variable	Standardised coefficient (β)	t	95% CI	p-value
Age	-0.021	-0.38	-0.183-0.123	0.704
Gender	0.151	2.722	0.091-0.566	0.007
Educational Qualification	0.014	0.248	-0.097-0.125	0.804
Number of medications	-0.051	-0.947	-0.127-0.044	0.344
Perceived general health	0.03	0.556	-0.112-0.2	0.579
Medication management	0.141	2.586	0.075-0.553	0.01

Despite the majority of the participants concurring that they were spending a lot of money on their medications, many did not perceive them to be a burden. This is similar to previous reports. [7-9] This finding is significant because the general belief is that many medication issues in resource-limited countries, such as Nigeria, are related to medicine access and cost. Therefore, many researchers need to pay more attention to the significance of the polypharmacy burden in those countries. The observation in the present study indicates that the cost burden may not be a significant factor in initiating a deprescribing process.

Studies have reported contradictory findings concerning the associations between the number of medications and willingness to deprescribe among older patients. [15,18-20] In the present

study, however, no such association was found. This finding suggests that the number of medications may not be the most crucial burden in deprescribing in older patients. It highlights the need to consider other medication burden factors, such as the types of formulations and the people involved in medication management (need for assistance in medication administration), which are not captured by the rPATD.[21] This assertion is corroborated by the fact that medication management (whether self-managed, family-managed or caregivers-managed) is associated with the willingness to deprescribe in the present study. Furthermore, this result indicates that in practice, rather than emphasising the number of medications in a deprescribing process, clinicians should find out what constitutes a medication burden to a patient

so that the deprescribing intervention can begin with addressing them.

This study found a significant association between willingness to deprescribe and gender and the person responsible for managing older patients' medications. This result highlights the need to consider gender differences in the development and implementation of deprescribing interventions. Evidence suggests that willingness to accept deprescribing may be influenced by gender-related socio-cultural factors such as the ability to pay for medication. [22]

Furthermore, older women provide caregivers' responsibilities to their spouses, including supervising their medications. Their availability for this role may be a barrier towards deprescribing for the spouses. However, the reverse may be the case when older women require medication assistance. [23]

This is the first study that evaluates the perceptions of older patients about deprescribing in secondary healthcare facilities where most chronic disease medications are initiated in SSA healthcare systems. However, this study has some limitations and should be interpreted within the context of these limitations. A structured questionnaire was used for data collection, which may not permit an in-depth analysis of the participants' attitudes. This cross-sectional study does not allow for the determination of cause-and-effect relationships. Most of the participants in this current study had their medications managed by caregivers; it will be worthwhile to assess the views of these caregivers about deprescribing using the rPATD version for caregivers.

Conclusions

This study found that most participants expressed positive attitudes and willingness to accept the deprescribing of their medications. Female gender and caregivers' involvement in managing medications were predictive of the participants' willingness to accept deprescribing. Future studies should explore the best approach

to communicating deprescribing to older patients.

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