

Independent Community Pharmacy Stakeholder-Informed Dispensing Fee Reform: A Cross-Sectional Survey.

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Abstract

Background:

The South African four-tier dispensing fee was formally implemented in 2010. The fee structure was determined using a zero-based model and a return-on-investment dispensary cost, with the assumption that a well-run pharmacy dispenses 2300 items per month. The fee structure has significant implications for the viability of independent community pharmacies.

Objectives:

To quantitatively examine the current dispensing fee structures' influence on service delivery at independent community pharmacies in the KwaZulu-Natal province and to propose independent community pharmacy stakeholder-informed priorities for fee revision.

Methods:

A descriptive cross-sectional online survey was conducted between 5 December 2025 and 28 February 2026 among pharmacy owners, responsible pharmacists, and pharmacists working at independently owned pharmacies in the KwaZulu-Natal province. Chi-square tests were used to assess associations, and a binary logistic regression was used to identify predictors. All data analysis was done at a level of significance.

Results:

Male respondents represented 58.2% of the sample, with female respondents representing 41.8%. The majority of the respondents were from peri-urban locations (48.6%). Sixty-one of the 146 respondents (41.8%) reported service changes in response to the fee structure. Pharmacies dispensing less than 2300 items per month were more likely to offer additional services than those dispensing at/above 2300. Years of community pharmacy experience were a significant predictor of service adaptation (AOR 6.13; 95% CI 1.013-1.114, $p=0.13$).

Conclusion:

Survey findings suggest the current dispensing fee structure may be context-blind, with respondents dispensing below the 2300 items per month threshold being pushed to adopt innovative strategies to ensure practice viability. Respondents with more years of experience were more likely to provide additional services at their pharmacies.

Recommendations:

The fee structure needs to incorporate actual pharmacy operational costs and location. Future research should consider adopting qualitative methods to explore viable options to align the dispensing fee structure with actual pharmacy operations.

Keywords: prices; dispensing; medicine policy; pharmaceutical policy; medical aid scheme;

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Background

The South African dispensing fee structure, which is the only regulated mechanism by which community pharmacies can generate revenue from the sale of scheduled medicines (Government Gazette, 1998; Gray, 2009) and applies to the private sector, is fundamental to the sustainability of community pharmacy practice. Beyond the fee structure, the fee influences provider behavior, the scope and quality of pharmaceutical care, and patient access to care. Medicine pricing is, therefore, a critical component of health care policy and requires an appropriate balance between financial sustainability and equitable access to quality health services. Given the crucial role the dispensing fee plays in community pharmacy remuneration, the fee structure directly influences provider decision-making, including the quantity and type of services offered. While other medicines policies such as that for generic substitution have been implemented with minimal challenges (Andy Gray, 2015; Bangalee & Suleman, 2016), the dispensing fee has been contested since its inception (Gray, 2009; Ngozwana, 2016). The greatest difficulty has been encountered in determining a reasonable and enforceable dispensing fee. (Andy Gray, 2015), with little empirical quantitative research evidence available to inform the meaningful revision of the current fee structure. The country's regulatory environment as a whole further complicates these challenges. Medical aid schemes, which collectively insured an estimated 9.13 million beneficiaries and accounted for R 239 billion in annual benefits paid, according to a 2024/25 report (Council for Medical Schemes, n.d.) are not compelled to reimburse community pharmacies at the regulated rate. A commentary piece by the Pharmaceutical Society of South Africa (PSSA) cited that the Health Minister had acknowledged the trading-related matters (designated service provider arrangements, medical scheme reimbursement, amongst others) at play, which impact the dispensing fee. (Pharmaceutical Society of South Africa, 2009). This creates additional financial pressure for independent community pharmacies. The combined effect of the regressive dispensing fee policy, the medical aid scheme co-payment design, and the generic substitution policy under Section 22F of the Medicines and Related Substances Act 101 of 1965 (National Department of Health, 1996) may have an impact on independent pharmacy operations that has not been empirically examined before. Understanding independent community pharmacists' experiences is important, as they are directly affected by the dispensing fee structure policy and have valuable insight into the resources required to deliver quality pharmaceutical services.

This paper quantitatively examines how the current dispensing fee structure has influenced service delivery at independent community pharmacies, explores the geographic variations in service patterns, and identifies independent pharmacy stakeholder-informed priorities for fee reform. The study provides evidence on the relationships among policy design, pharmacy operations, and future policy development. The findings are intended to provide a profession-informed foundation for fee reform that extends beyond routine inflation-linked adjustments.

Methods

Study design and setting

This study used a cross-sectional survey to collect data from independent community pharmacy stakeholders (independent pharmacy owners, Responsible pharmacists, and pharmacists) working in KwaZulu-Natal province, South Africa, from 5 December 2025 until 28 February 2026. The findings regarding perceptions of the 2024 and 2025 4-tiered dispensing fee structures were analysed and reported separately. The current study analyses a different set of questions in the same dataset, which address the impact of the dispensing fee structure on independent community pharmacy service offerings, variations in services by geographic location and dispensing volume, and recommendations for fee reform, using binary logistic regression to identify independent predictors of service delivery.

Inclusion and exclusion criteria

Inclusion criteria

- Must have worked in a retail environment for at least six months
- Must have completed both internship and community service
- Participants working in independently owned community pharmacies

Exclusion criteria

- Has less than six months of retail experience
- Pharmacists working for corporate chains
- Pharmacists working in the public sector pharmacies
- Feedback from participants who withdrew consent

Sample size

The sample size was calculated using the finite population sampling calculator, with a 5% precision, a 95% confidence interval (CI), and an estimated population of 437

independently owned pharmacies in the KwaZulu-Natal province. (Nyamuzihwa et al., 2023). Therefore, in calculating the number of targeted participants, the study used independent community pharmacy sites to estimate a total number of 226 respondents required, after estimating a 90% survey completion rate.

Participant recruitment

To reach the targeted study participants, two recruitment strategies were adopted to ensure a sufficient number of participants. The survey link was shared with potential participants through the Independent Community Pharmacists Association (ICPA) via email and WhatsApp from 5 December 2025 till 28 February 2026. The ICPA is a non-profit, independent organization for pharmacists and pharmacy owners working in the independent community pharmacy sector in South Africa; however, for this study, the link was shared with stakeholders from the KwaZulu-Natal province. Despite weekly reminders, uptake was limited, which is a pattern previously reported regarding surveys distributed to health care professionals (Cho et al., 2013; Cook et al., 2009). In response to the low response rate, additional recruitment strategies were employed whereby prospective participants were contacted telephonically using publicly available pharmacy contact details. The survey was also distributed in person to ensure that participants in rural locations who may have struggled with connectivity and may not have received the invitation to participate were also included in the study. Despite these combined data collection approaches and repeated reminders, the response rate remained low and continued recruitment yielded negligible additional participation.

Survey instrument

Data were collected using a self-administered survey via a Google Form link that was shared via email and WhatsApp messenger from 5 December 2025 to February 2026. The survey was developed in reference to the South African dispensing fee structure regulation applicable to the South African private sector and to relevant literature on community pharmacy remuneration. Content validity was established through iterative revisions of the survey questions and consultation with an expert panel which included independent community pharmacists. The reliability and validity of the questionnaire were subsequently assessed through a pilot study among 25 pharmacists.

The following survey instruments were analyzed: the impact of the current dispensing fee structure on the manner and type of services rendered by independent community pharmacies. Questions requesting respondent inputs on

recommendations for fee revision included a single-choice item on the preferred fee structure, a multiple-response item on the costs that should be considered in determining a revised fee, a single-choice item for determining an appropriate basis for the fee, and a multiple-response item on factors supporting development of a more appropriate fee structure.

Data analysis

The data were downloaded as an Excel spreadsheet, coded, checked, and analyzed using Statistical Package for the Social Sciences (SPSS) version 30. To retain the original variables, the existing variables were recoded into separate variables for the logistic regression. Variables were summarized using descriptive statistics, including means, standard deviations (SD), and frequencies. Chi-square tests were used to assess associations between categorical variables, with statistical significance set at $p < 0.05$. When cells did not meet the expected cell count threshold (20%), a Fisher's exact test was conducted.

Pharmacy location, dispensing volume, years of independent community pharmacy experience, and the staff complement were all used in a binary logistic regression to assess the association with the outcome (service delivery changes). Nagelkerke, Hosmer-Lemeshow, and the odds ratio with 95% confidence interval (CI) were used to assess model fit. For the service changes variable, respondents who responded "not sure" were excluded from the regression analysis.

Ethical consideration

Ethical approval was granted by the Biomedical Research Ethics Committee of the University of KwaZulu-Natal (BREC/00007072/2024). The initial approval was granted on 30 September 2024, and following protocol amendments, a new approval was granted on 2 December 2025. All data were collected following approval of the amended protocol. Participation in the study was anonymous and voluntary; participants were informed that they could withdraw informed consent at any stage of the study. The authors confirm that the study complies with the Declaration of Helsinki.

Results

A total of 146 respondents completed the questionnaire out of the projected minimum of 226, representing 64.6% of the minimum required sample. All 146 participants who completed the survey met the survey eligibility criteria and were included in the analysis. Figure 1 below presents the participant flow.

Number of respondents required according to the estimate calculated using the number of active independent community pharmacy sites (437) which yielded a projected minimum of
Potentially eligible: Number of respondents who completed the self-administered survey
Examined for eligibility: eligibility was examined using self-reported years of community pharmacy experience which was a required field on the self-administered survey.
Confirmed eligible: All 146 respondents were eligible for inclusion as they met the inclusion criteria.
Analysed: All 146 participants were included in the analysis.

Figure 1: Flow chart reporting participant flow

Male respondents made up 58.2% of the sample, with 41.8% of the sample being female. The majority of respondents were from peri-urban settings (48.6%), followed by urban (34.2%) and rural (17.1%). The mean age and years of community pharmacy experience of respondents were 41.4 (SD: 11.9) and 13.1 (SD: 10.7), respectively (Table 1).

Table 1: Respondent characteristics

Variable	N (146)	Percentages
Gender		
Male	85	58.2
Female	61	41.8
Pharmacy Location		
Rural	25	17.1
Peri-urban	71	48.6
Urban	50	34.2
Age (years) (mean (SD))	41.4 (11.9)	
Years of experience (mean (SD))	13.1 (10.7)	

Table 2 presents the number of respondents selecting each option, with percentages reflecting those who reported making changes to professional services (n = 61). Extending services to clinic services was the most endorsed service type (n = 49, 80.3%), followed by changed product choice,

which could have included promoting generic substitution (n = 47, 77%), child and maternal services (n = 19, 31.1%), and other services (n = 16, 26.2%). None of the respondents offered smoking cessation programs.

Table 2: Frequency table

	n	%
Changes to professional services N=146		
Yes	61	41.8
No	55	37.7
Not sure	30	20.5
Service type N=61 (respondents could select multiple options)		
Changed product choice, e.g., promote generic substitution	47	77
Extended services to clinic services	49	80.3
Smoking cessation programs	0	0
Child and maternal services	19	31.1
Other: please specify what changes you have made (e.g., focused on PIT, Immunization, Pharmacy services per SAPC Board Notice):	16	26.2
Fee structure most appropriate for determining a dispensing fee, N=146		
Percentage-based fee of the SEP	24	16.4
Be a flat-rate fee not linked to SEP	14	9.6
Current 4-Tiered fee based on medicine price ranges	1	0.7
If the 4-tiered model was a fixed fee	95	65.1
Combination of the above	11	7.5
Other (please specify): _____	0	0
Not sure	0	0
Costs to be considered during the determination of the dispensing fee, N=146 (respondents could select multiple options)		
Overhead costs (rent, staff salaries, utilities)	143	97.9

Cost of pharmacy equipment and maintenance	126	86.3
Cost of professional indemnity	124	84.9
Costs associated with continuous professional development	103	70.5
Other (please specify): _____	3	2.1

When respondents were asked to select a preferred dispensing fee structure, the majority $n = 95$ (65.1%) selected a fixed fee within a 4-tiered model, followed by a percentage-based fee not linked to the SEP $n = 24$ (16.4%), and a flat rate fee not linked to the SEP $n = 14$ (9.6%). Lastly, 1 respondent preferred the current 4-tiered dispensing fee structure based on medicine price ranges.

Respondents were asked to select cost components they felt should be considered in determining the dispensing fee ($N = 146$). Respondents could make multiple selections; therefore, the percentages are based on cases rather than responses. Overhead costs were the most endorsed component among respondents ($n=143$, 97.9%), followed by equipment costs ($n=126$, 86.3%). Only $n = 3$ (2.1%) of

respondents identified other cost factors beyond those listed, which included “cost of expired stock” $n = 1$ (0.7%), “interpretation of prescription” $n = 1$ (0.7%), “different geographical location” $n = 1$ (0.7%), suggesting the options presented comprehensively capture the profession's cost priorities.

Binary logistic regression

Binary logistic regression analysis of factors associated with offering additional services among respondents who provided a definitive (yes/no) response on service changes and had complete predictor data ($n = 106$).

Table 3: predictors of service changes in response to the dispensing fee structure

Variables	<i>p</i> - value	Wald statistic	AOR	95% CI
Years of experience (continuous)	0.013*	6.136	1.062	1.013 – 1.114
Staff complement (continuous)	0.914	0.012	1.013	0.806 – 1.271
Location (ref – urban)				
Rural	0.085	2.971	0.323	0.089 - 1.168
Peri-urban	0.504	0.446	0.712	0.263 – 1.930
Dispensing volume (ref – 2300 and above)				
Below 2300	0.126	2.340	2.372	0.784 – 7.175

*Notes: reference categories presented in parentheses next to the predictor variable for categorical predictors. *shows p -value < 0.05, AOR shows the adjusted odds ratio, and CI shows the confidence interval.*

A binary logistic regression was conducted to determine the independent predictors of service changes in response to the dispensing fee structure (n = 106; 30 respondents were excluded due to being unsure, and 10 respondents were excluded due to missing values on predictor variables). The overall model was statistically significant: $\chi^2 (5) = 19.725$, $p = 0.001$, Nagelkerke $R^2 (0.227)$, Hosmer and Lemeshow test $\chi^2 (8) = 3.944$, $p = 0.862$. Years of community pharmacy experience was the only significant independent predictor of service delivery change in the adjusted model (AOR = 1.062, 95% CI: 1.013-1.114, $p = 0.013$). For every

additional year of community pharmacy experience, the odds of having made service delivery changes increased by 6.2% (AOR=1.062).

Geographic location (rural: Exp (B) = 0.323, 95% CI: 0.089-1.168, $p=0.085$; peri-urban: Exp(B) = 0.712, 95% CI:0.263-1.930, $p = 0.504$), dispensing volume group (Exp(B) = 2.372, 95% CI: 0.784-7.175, $p= 0.126$), staff complement (Exp(B) = 1.013, 95% CI: 0.806-1.271, $p = 0.914$) were not significant independent predictors of service delivery changes.

Table 4: Services rendered by location and dispensing volume

Variable	Changed product choice, e.g., promote generic substitution	Extended services to clinic services	Child and maternal services	Other: please specify what changes you have made (e.g., focused on PIT, Immunization, Pharmacy services per SAPC Board Notice):
Location				
Rural	3	8	1	1
Peri-urban	25	23	12	9
Urban	19	18	6	6
χ^2	9.463	3.579	3.683	1.196
p-value	0.009	0.167	0.159	0.550
Dispensing volumes				
Less than 2300	28	29	15	14
2300 items and above	17	17	3	1
χ^2	0.61	0.005	0.273	0.353
p-value	0.751	1.00	0.038	0.007

Peri-urban pharmacies were most likely to have changed product choice (n = 25; 53.2%), followed by urban

pharmacies (n = 19; 40.4%), while rural pharmacies reported lower rates of product adaptation (n = 3; 6.4%). A

significant association was observed for dispensing volume and child and maternal services offering ($p = 0.038$, $V = 0.273$) and other services ($p = 0.007$, $V = 0.353$). Respondents who reported their pharmacies as dispensing below the 2300 items per month threshold were more likely to offer child and maternal health services compared to those dispensing at or above the threshold, $n=15$ (83.3%) vs $n=3$ (16.7%).

A moderate association was also observed for other unlisted services, $\chi^2 = 7.342$; $p = 0.007$, $V=0.353$. The 15 respondents who reported incorporating other services ($n = 14$; 93.3%) were from pharmacies dispensing below the 2300 items per month threshold, compared to $n = 1$ (6.7%) dispensing at or above the threshold. Pharmacies dispensing below the threshold were more likely to offer other services, such as PIT, Immunization, and Pharmacy services, per the SAPC Board Notice.

Discussion

The impact of the 4-tiered dispensing fee structure on independent community pharmacy service delivery, provider behavior, and respondents' priorities for reform were examined. Responses to the dispensing fee policy resulted in the adoption of changes that were informed by dispensing volumes, pharmacy location, and years of experience in the independent community pharmacy sector. These changes have direct implications for the design of policies affecting the remuneration of independent pharmacies.

A significant association was noted between pharmacy location and changing product offering. $\chi^2 = 9.463$; $p = 0.009$, revealing an imbalance in the adaptive capacity of independent pharmacies. Urban and peri-urban pharmacies were more likely to change product choice (40.4% and 53.2%, respectively) compared to rural pharmacies (6.4%). Rural pharmacies may not be able to provide a diverse product range. This finding is consistent with evidence that volume-based fee-for-service models often disadvantage lower volume practices. (Ceka et al., 2026; Newman et al., 2019). Rural pharmacies were already identified as being more likely to dispense below the 2300 items per month threshold. The dispensing fee structure currently in use concentrates the greatest financial pressure on pharmacies, which already have a limited capacity to respond through product diversification. This asymmetry between adaptive pressure and adaptive capacity in rural pharmacies may create unintended structural disadvantages that an inflation-linked adjustment to dispensing fees alone cannot address. Pharmacies dispensing less than 2300 items per month were more likely to offer additional services, such as child and

maternal health services and other services (as per SAPC board notice, etc.). This finding is consistent with international findings suggesting that health care providers operating in inadequate fee-for-service environments are more likely to offer a diverse range of services. (Ceka et al., 2026). The expansion of services among pharmacies dispensing below the threshold was also documented in a comparable rural setting in Australia, where allied health care workers, including pharmacists, were already expanding services in a resource-limited environment to account for the workforce maldistribution. (Taylor et al., 2021). The key difference between these two contexts is that the Australian remuneration model is actively advancing to ensure the remuneration policy aligns with the realities of rural pharmacy practice.

Other studies documenting service diversification or expansion as the most dominant response strategy to inadequate reimbursement cited front shop retail expansion as the key financial survival strategy. (Schmidtke & Warholak, 2025). This expansion is not necessarily attributed to professional aspiration, but to financial necessity, as evident in the South African context. The study also highlighted that, as alternative revenue streams were adopted, concerns about managing new services could compromise the quality of dispensing services, which is the core function of the pharmacy profession. This potential quality trade-off represents the inherent risks carried by inadequate remuneration policies and policies that incentivize volume over quality.

The same financial pressures may shape the range of medicines pharmacies choose to stock. Most medical aid schemes in the country have co-payment structures that incentivize generic medicines by attracting larger co-payments for branded drugs, which essentially push members to opt for generics. (de Jager & Suleman, 2019; Nicolosi & Gray, 2009). From a rural pharmacy perspective, it makes rational sense to stock a narrower range of medicines that are more affordable based on the patient's affordability.

The dispensing fee structure likely provides more incentives for the volume-based dispensing of generic medicines since lower-priced medicines only give absolute returns when sold in larger quantities, possibly explaining the documented increase in generic medicine use in South Africa. The generic substitution policy and reduced co-payment for medical aid scheme members only benefit pharmacies when the dispensing volume is sufficient to generate viable absolute revenue from proportionally higher but individually lower-value generic transactions. For lower volume pharmacies (rural and peri-urban), the regressive

nature of the model has limitations as they earn a higher percentage fee on each generic dispensed; however, their low dispensing volumes ensure that this higher percentage is only applied to a smaller number of lower priced items, generating less absolute revenue than a non-regressive structure would produce for the same dispensing profile. A Constitutional Court ruling highlighted the threat that the fee structure posed to rural pharmacies, as they supply products with a lower average SEP range than urban pharmacies, making them more susceptible to lower rand income at the lower end of the SEP range. (Constitutional Court of South Africa, 2005).

A fundamental self-defeating policy loop emerges when the generic substitution policy, the medical aid co-payment design, and the regressive dispensing fee structure converge. The generic substitution policy adequately pushes the dispensing of lower-priced medicines. (Bangalee & Suleman, 2019; Gray, 2009; Gray et al., 2016; Moodley & Suleman, 2019) (explicit intent), successfully achieving its medicine price reduction objective, which consequently results in a lower absolute dispensing fee revenue generated to sustain pharmacies that implement these policies. In this case, the success of the medicine pricing policy structurally correlates with the gradual deterioration in pharmacy financial viability, which may have been an unintended consequence that has not been addressed in the design of the dispensing fee structure. The current fee structure penalizes compliance with its own associated policy objectives, suggesting an incoherent health system design. Lower-volume pharmacies (predominantly rural) were more likely to offer additional services, which may not reflect professional opportunism but instead be an adaptive response driven by a structural policy failure.

It is unclear whether existing policies are considered when new policies are enacted. The policy promoting generic substitution, the dispensing fee policy, and medical aid co-payment mechanisms are all designed by different bodies at different points in time and interact in ways that systematically disadvantage rural and lower-volume dispensing pharmacies. This disadvantage is not necessarily a design flaw of a single policy but an emergent consequence of real-world policy interaction.

The finding that pharmacy location and dispensing volume were not independent predictors of adaptation, despite both variables showing strong associations in the bivariate analysis of the types of services offered, may suggest that the pressure to adapt is evenly distributed across independent pharmacies, with geographic location and dispensing volume influencing the types of service changes or adaptations. Rural pharmacies and those dispensing

below the threshold do not necessarily adapt less; they adapt differently. The wide confidence intervals for the rural and volume estimates more closely reflect the subgroup sizes, and a larger sample size would be required to achieve more useful precision.

The effect of years of community pharmacy experience cannot be interpreted in isolation, as it is influenced by prolonged exposure to fee uncertainty and can be explained using South Africa's history with pharmacy regulations. The dispensing fee was proposed in 2003 and challenged by industry stakeholders in court. Following multiple fee revisions and engagements, the fee was implemented in 2010. Pharmacists with more years of independent community pharmacy experience have practised under policy uncertainty since the fee policy's inception, which made fee-informed service adaptation one approach to sustain their businesses. The likelihood of adopting adaptive changes may not be due solely to the present fee structure, but rather to years of pressure to do so. The more experienced pharmacists in this study sample may be those who successfully navigated the community pharmacy reforms.

The dispensing fee may also not be an isolated case leading to adaptation; the amendment of the Medicines and Related Substances Control Act. (Government Gazette, 1998; Ngozwana, 2016) also made provision for non-pharmacists to own pharmacies, which led to the growth of corporate pharmacy chains in the community pharmacy sector. Independent community pharmacies were faced with a fee structure that constrained dispensing revenue and competition from corporate chains. International evidence indicates that the success of corporate chain pharmacies may be linked to their established distribution networks, purchasing power, modern retail pharmacy layouts, and diversified front-shop products. (Pukhov et al., 2026), which, in South Africa, may give them the capacity to absorb the financial inadequacies of the fee structure. The sophisticated pharmacy layout adds a dimension of competition, as patient satisfaction with pharmacy services has been attributed to pharmacy layout and physical environment. (Guhl et al., 2019). This aligns with the findings of a cross-sectional study conducted in Jordan, in which researchers reported that corporate pharmacies were more likely to be profitable than independent pharmacies, with a greater proportion of their sales volume attributed to the sale of non-medicinal items. (Odeh et al., 2025).

Personalized care, medication counseling, and shorter waiting times have been cited as reasons patients prefer independent community pharmacies. (Bratkowska et al., 2020; Odeh et al., 2025). While these studies were not

conducted in the South African health system context, they do highlight the unique advantage independent pharmacies have in providing these important services. However, the current dispensing fee structure does not seem to factor these in the model, which could erode the very services that keep independent pharmacies in business.

The majority (97.9%) of respondents endorsed overhead costs, followed by equipment costs (86.3%), professional indemnity insurance (84.9%), and continuing professional development (70.5%) as factors to be considered in fee determination, consistent with analyses conducted in similar community pharmacy settings. A study conducted in Brazil analyzed the costs of a structured medication dispensing service and found that human resources and professional training accounted for about 90% of the service's recurrent costs (Cardoso et al., 2020). This study identified equipment as being subject to annual depreciation.

Respondents expressed a clear view on how the fee should be structured. The strong preference for a fixed 4-tiered model (65%) reveals consensus among respondents. This preference for a fixed tiered structure is not an endorsement of the current fee model, but an endorsement of tiering as a principle while rejecting its link to the SEP, which currently defines the dispensing fee structure. The preference for a fee determined independently of the manufacturer's selling price reflects a desire to decouple the dispensing fee from the SEP. This proposed fee design directly aligns with the significant endorsement of overhead costs ($n=143$, 98.6%) as a factor to be considered when designing the pricing policy. Overhead costs are independent of medicine prices, and a fixed model could be a more logical structure based on respondents' preferences.

The 2005 court engagements document an issue that may be largely unexamined and yet fundamental to the dispensing fee conversation. The absence of a shared definition for "dispensing" is evident from the available evidence of the fee contestation (Constitutional Court of South Africa, 2005). This could have consequences for arguably the most clinically significant (Rocha et al., 2020) yet least standardizable aspect of the dispensing process, which is patient counseling. Patient counseling needs vary across patients and medicines (Chong et al., 2013), and a fee structure that remunerates uniformly, irrespective of the time spent with the patient, may create an incentive to compress components of the dispensing process that impact patient outcomes. The literature reports low levels of patient counseling during the dispensing process. (de Souza et al., 2022; Mesquita et al., 2013; Mobark et al., 2019), reducing this activity to mere medicine delivery.

Limitations

The proportion of the target sample that participated was the most notable limitation of the study, which contributed to the wide confidence intervals. In addition, the study used pharmacy sites instead of actual participants to calculate the sample size; this was due to the difficulty in obtaining the number of registered participants in the KwaZulu-Natal province. While a study site may have more than one pharmacist, their experiences with the fee structure will differ.

The respondents who completed the survey are most likely those who hold strong opinions or grievances regarding the dispensing fee structure and may not necessarily be a good representation of the average independent community pharmacy stakeholder. The study was also conducted in the KwaZulu-Natal province and is not representative of other provinces or areas. Therefore, the findings of this study cannot be generalized.

Respondents who were unsure of service changes in their pharmacies were removed from the regression. The Mann-Whitney $U = 1391.500$, $Z = -3.201$, $p = 0.001$ revealed that respondents who provided a definitive answer were significantly more experienced than those who were unsure. This finding suggests that the logistic regression findings are more representative of the more experienced respondents. The dependent variable also asked whether respondents made service changes in response to the current dispensing fee structure, and since the current fee structure (2024) is the latest publication of a policy that was first proposed in 2003 and implemented in 2010. Therefore, respondents may have included service changes made in response to earlier policy iterations; the interpretation of the outcome may be fee-informed service adaptations over an unspecified period rather than in response to the 2024 publication. Self-reports may be subject to bias as they cannot be verified against actual administration records.

Conclusion

The findings of this study call for several considerations by the Pricing Committee. Firstly, the dispensing fee should be based on a structural design that is not linked to the manufacturer's selling price, replacing the regressive fee attached to the SEP and more reflective of the actual costs involved in dispensing, such as overhead, pharmacy equipment, professional indemnity, and continuing professional development. The basis for determining the dispensing fee should consider low-volume pharmacy operational costs, which are misrepresented by the assumption underpinning the current fee structure. The medical aid scheme's non-compliance with the dispensing

fee policy (Mpanza et al., 2019; Schellack, 2023) needs to be addressed, as this alone can alleviate significant financial pressure on independent community pharmacies. Lastly, the policy incoherence between the policy encouraging generic substitution, the medical aid co-payment design, and the dispensing fee structure needs to be formally assessed, as the consequences faced by rural pharmacies can be attributed to their interaction.

List of abbreviations

ICPA	Independent Community Pharmacy Association
SPSS	Statistical Package for the Social Sciences
SEP	Single Exit Price
SAPC	South African Pharmacy Council
PIT	Pharmacist Initiated Therapy

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Author contributions

Conceptualization: ZLN, VB, VN, RP; methodology: ZLN, VB, VN, RP; validation: ZLN, VB, VN, RP; formal analysis: ZLN, VB, VN, SC; investigation: ZLN, VB; resources: ZLN; data curation: ZLN; writing-original draft preparation: ZLN, VB, VN, SC; writing-all authors; visualization: ZLN, VB, VN; supervision: VB, VN, RP, SC; project administration: ZLN, VB. All authors have read and agreed to the published versions of this manuscript.

Data availability statement

The data that support the findings of this study are available from the corresponding author, ZLN, upon reasonable request.

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Conflict of interest

The authors report there are no competing interests to declare

Recommendations

Future research must focus on documenting the nature of the dispensing services offered by independent community pharmacies through qualitative methods, which could offer valuable insight for aligning the fee structure with services that promote optimal patient health outcomes.

Main author biography

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