Perceived Knowledge of Scheme Members and Their Satisfaction with Their Medical Schemes: A Cross-Sectional Study in South Africa.

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Abstract

Background: South Africa has a dual healthcare system comprised of private and public sectors covering 16% and 84% of the population, respectively. Medical schemes are the primary source of health insurance in the private sector. The aim of this study was to assess the perceived knowledge and satisfaction of open medical schemes members.

Methods: A cross-sectional survey was conducted using a stratified systematic sample of members from 22 open medical schemes. Nine hundred and sixty members were requested to complete an online semi-structured questionnaire to determine their perceived knowledge and satisfaction with their schemes. We tested to see if variables such as age, gender, years of membership, education, income or having a chronic disease were associated with better-perceived knowledge or satisfaction. We calculated a composite perceived knowledge and satisfaction score, for which a score above 60th percentile for perceived knowledge and 60th for perceived satisfaction were considered good perceived knowledge and good perceived satisfaction with their schemes.

Results: Respondents, generally perceived themselves to have good knowledge and were satisfied with their schemes except for accessibility to doctors under the designated service providers arrangement. Overall, members were satisfied, especially with the quality of service from their designated service providers (DSPs) and their schemes. However, only 9% were satisfied with accessibility to doctors under their DSP arrangement, 25% were satisfied with the cost of scheme membership and only 46% were satisfied with the prescribed minimum benefit package. The test for association showed that years of medical schemes membership, perceived knowledge of the prescribed minimum benefits, better income and laying a complaint were associated with better-perceived knowledge.

Conclusion: Medical schemes remain a key element of private healthcare in South Africa. The analysis shows that medical schemes, should put more effort into the accessibility of general practitioner under their designated service providers. Furthermore, the PMBS should be reviewed to provide a comprehensive benefits basket without co-payment for members as recommended by the Medical Schemes Act Amendment Bill of 2018.

Background

Health insurance and medical schemes worldwide face challenges due to reforms aimed at addressing the health needs of the population [1]. Health insurances are an alternative source of healthcare financing often affected by a country's economic constraints [2]. In most countries, health insurance aims at expanding healthcare availability and affordability and decreasing inequity within the healthcare system [3]. As many countries in Africa do not have strong national health insurance, health insurances only benefit a small percentage of the population [4].

South Africa has a dual healthcare system, with private and public sectors covering 16% and 84% of the population, respectively [5, 6, 7]. The two sectors operate in parallel in a national health system that faces

strong complaints about healthcare inequity and patients' satisfaction [5, 6, 7, 8]. Private insurance funds are called medical schemes and are the primary source of health insurance in the private sector [9]. Medical schemes offer voluntary pre-payment and are utilized to access healthcare in the private health sector. There are significant gaps in terms of coverage and access to health care in the tax-funded services of the public sector and the packages offered in the private sector through medical schemes, particularly the lower cost packages [7, 10].

In South Africa, there are 82 medical schemes consisting of 22 open schemes and 60 restricted schemes [11]. *Open Schemes* are open to any applicant. *Restricted Schemes* define their membership in terms of specific criteria, such as a profession, an employer group, or a commercial or industrial sector [9, 11, 12]. There are significant differences between the two in terms of demographics, number of beneficiaries and the range of benefit options they offer. In 2018, the benefits options in open schemes registered with the CMS was 181 as compared to 143 in restricted schemes [13]. The high number of health plans in open schemes have been identified as a challenge as members cannot identify those that offer the best value for money [7, 8, 9].

Medical Schemes are regulated by the Council for Medical Schemes through the Medical Schemes Act No 131 of 1998 [12, 14]. One of the key elements of the Act, is the prescribed minimum benefits (PMBs) [14]. The PMBs were introduced in 2000 to reduce financial catastrophe and to ensure that all medical scheme members have access to certain minimum health services, regardless of the benefit option they have selected [12, 14, 15]. The PMBs provide a social health insurance platform for medical scheme members and include 270 Diagnostic Treatment Pairs and 26 chronic conditions that should be covered by medical schemes without financial limits [8, 12, 14, 15]. To reduce costs, schemes have preferred provider arrangements with hospitals, doctors and other healthcare providers [8, 12, 14]. In addition, accessing services from a preferred provider, called a Designated Service Provider (DSP) ensures that members are not charged co-payments [8, 12, 14].

Globally, populations with low household income are subject to poor health care coverage and out of pocket payments (OOP). OOP accounts for almost a quarter of private healthcare financing globally, partly due to the use of personal individual medical savings accounts in many funds [6]. In South Africa, members of medical schemes have OOP expenditure through co-payments and for services not covered by their schemes [8]. Mohammed and Dong assert that medical schemes' beneficiaries' complaints rise when providers deprive enrolees of their full entitlements or when additional fees are added [16]. Disparities, inequities, inefficiencies, mismanagement, and constraints of health resources have been identified in the healthcare system. Affordability of medical schemes have identified as a key obstacle to growth in the industry [6, 7, 8, 9].

In Nigeria, a study on knowledge, attitude and perception (KAP) has shown that people have great expectations for their schemes [4]. In another Nigerian study, satisfaction rate was rated high (42%) for enrolees in a scheme with length of employment, salary income, hospital visits and duration of enrolment shown to slightly influence satisfaction [16]. A similar study in Ghana indicated that there was a lack of

knowledge about insurance products and insurance literacy was connected to household income [17]. Other determinants of insurance awareness were age, gender, and educational status. Older individuals were generally more knowledgeable about insurance, as were males and those enjoying a better education [17]. Studies in other countries have shown that consumers did not always receive the information necessary to make informed benefit option choices and many were not aware of the publicly available information [16, 19].

Despite the desire to improve medical schemes in South Africa, only one independent survey of medical scheme members' knowledge, attitudes and perceptions could be identified [18]. This was conducted by the Competition Commission in 2016. It found that 76% of respondents understood the cost implication and benefits options of the medical schemes and had good accessibility to a private doctor or hospital; 41% left their medical scheme due to high cost.

The objectives of this study were to determine the perceived knowledge and satisfaction of open schemes members with their current package, the benefit options, the PMBs, designated service providers, and the authorization and complaints procedure. A further objective was to determine if perceived knowledge or satisfaction was associated with age, gender, years of membership, education, income and having a chronic disease.

Methods

Study design

We conducted a descriptive online cross-sectional survey of the principal members of open medical schemes in South Africa. We used a Google form to conduct the survey.

Target Population

The study population consisted of 2 347 757 open scheme principal members [11].

Sample Size

Based on a 5% margin of error, 95% confidence interval and an estimated response rate of 40%, the estimated sample size was 384. A stratified systematic sample with a random starting point was drawn from the members of the 22 open medical schemes in proportion to their size.

Study Setting

The study was conducted in the Republic of South Africa. In mid-2016 its population was estimated at 55,91 million inhabitants. South Africa is a multi-ethnic society with nine provinces and eleven official

languages.

Data Collection Method

The study team developed, piloted and calibrated a purpose-specific questionnaire to evaluate the perceived knowledge and satisfaction of open schemes' principal members. Great care was taken in the phrasing of questions to avoid leading questions, or questions difficult to understand.

The medical schemes were briefed and their support for the survey was obtained. The medical schemes agreed to distribute the questionnaires to their members with a covering letter that briefly explained the purpose of the survey. The letter provided a Uniform Resource Locator to the informed consent form that simplified the use of the online questionnaire.

The study used primary data through an edited Google form. We used a semi-structured questionnaire to evaluate the perceived knowledge and satisfaction of the participants. The questionnaire comprised of eight sections related to the medical scheme membership, the general experience of the medical scheme, the brokers, the benefits option, the prescribed minimums benefits, the designated service providers, the complaints and appeals and lastly the socio-demographic information.

The Council for Medical Schemes granted permission to conduct this research. The Research Ethics Committee of the Faculty of Health Sciences, University of Pretoria, approved the study.

Data analysis

We conducted a descriptive statistical analysis, such as mean, standard deviation and median. We measured the scores of principal members' perceived knowledge and their satisfaction levels towards their medical schemes and compared these scores across the factors such as age (a possible covariate), gender, years of membership, level of education, income level and whether the member suffers from a chronic disease.

Responses were on a 5-point scale of very positive, positive, neutral, negative and very negative. For statistical analysis, these were converted to numbers, where very positive was scored as a 5 to very negative as a 1. All responses that coded 4 and 5 were recoded as 1, while all coded as 1, 2 or 3 were considered as 0 implying not a good perceived knowledge or satisfaction. Thereafter, a score for each was computed by evaluating the performance of each respondent. This was collapsed down to three categories; good, average and poor, to determine the statistical association. A score above 60th percentile for perceived knowledge and 60th for perceived satisfaction were considered better-perceived knowledge and good perceived satisfaction with their schemes.

We tested for differences in the proportions of those with and without good perceived knowledge and satisfaction for different variables using the t-test for testing differences between proportion while Chi square the Fischer's exact was used to assess the association between factors and outcome of interest

and the Kruskal-Wallis rank tests was used to compare the responses of the degree of satisfaction the question by the demographic factors.

Results

Socio-demographic characteristics

Although a sample size of 384 was planned, 336 (87%) members responded. The demographic characteristics of principal member respondents are similar to the profile of principal members nationally [11]. Most respondents (73%) had tertiary education, 54% were married, 27% were 40–49 years old and 38% of respondents earned R30 000 (2 160 US$) or more. Seventy-two per cent regarded their overall health status as healthy, while 42% had a chronic disease. The top four chronic diseases were hypertension, diabetes, depression and thyroid conditions. The results are shown in Table 1.

Table 1
Socio-demographic characteristics of participants

Variables	Frequency (%)	95% CI
Gender		
Male	41	0.356–0.642
Female	59	0.537–.643
Age		
20 – 29	9	0.061–0.122
30 – 39	25	0.205–0.298
40 – 49	27	0.225–0.320
50 – 59	19	0.155–0.241
≥ 60	20	0.158–0.244
Marital status		
Married	54	0.483–0.590
Single	27	0.255–0.320
Divorced	12	0.086–0.156
Others	7	
Level of education		
Tertiary school	73	0.682–0.777
Secondary school	26	0.216–0.311
Monthly income		
< R 5000	4	0.022–0.066
R5 000 - <R10000	11	0.078–0.146
R10000 - < R15000	15	0.112–0.189
R15000 - < R25000	23	0.194–0.286
R25000 - < R30000	8	0.056–0.115
≥ R30000	38	0.336–0.441
Health status		
Healthy	46	0.409–0.516

CI= confidence interval

Variables	Frequency (%)	95% CI
Excellent health	25	0.211—0.305
Moderately healthy	24	0.202—0.295
Poor health	1	0.006—0.06
CI= confidence interval		

SE= standard error

R1= 0.072 US$ (2019)

Principal Members Knowledge And Satisfaction

Principal members were asked about their perceived knowledge of and satisfaction with their medical schemes, designated service providers (DSPs), brokers and drug coverage under the PMBs. More than 71% of members considered their knowledge to be good and were satisfied with their scheme whereas, only 46% of respondents were satisfied with the PMBs package.

Table 2 shows that 43% of participants had a poor satisfaction regarding the financial contributions they made to their medical cost, 62% of respondents perceived their brokers to be knowledgeable about medical schemes, 81% of respondents had a good satisfaction of the quality of service under the DSP and 44% were satisfied with their prescription drug coverage under the prescribed minimum benefits (PMBs). Forty-nine per cent of respondents had been requested to pay extra money for treatment or a drug, i.e. out-of-pocket payments (OOP) under the current PMBs. In terms of the DSPs, only 9% of the respondents were satisfied with their access to a DSP GP. The principal members' cumulative score for perceived knowledge was 67% whereas their satisfaction averaged 53%, brought down by the low satisfaction with their financial contribution made to their medical cost. Sixty per cent of respondents were likely to recommend their medical scheme to others. Among the respondents, only 23% had ever lodged a complaint with their schemes; 26% of whom were satisfied with the outcome of their complaint. Twelve per cent of them laid a complaint with the CMS and only 33% were satisfied with the outcome.

Table 2
Knowledge and satisfaction of principal members

Variables	Knowledge / Satisfaction %		
	Good	Average	Poor
Knowledge			
Information received before joining scheme	57	29	14
Understanding of benefits & costs	52	30	18
Financial contribution made	25	32	43
Brokers' knowledge	62	22	16
Knowledge about PMBs	54	32	14
Knowledge about the DSPs	55	22	23
Satisfaction			
Satisfaction with brokers	57	21	22
Interaction with scheme	65	24	11
Service provided by scheme	66	20	14
Satisfaction with the PMBs package	46	31	23
Coverage of drug prescription under PMBs	44	29	27
Quality of service under DSPs	81	16	3
Accessibility to GP when needed	9	16	75
Accessibility to medical specialist when needed	18	19	63

Cost-benefit And Choice Of Scheme Option

Medical schemes offer different benefit options at a different cost to their members. The results of the analysis showed that 30% of respondents were on a low-level option, 55% on a medium option and only 14% on a high option. When asked about the factors that influenced the choice of benefits option, the cost factor was shown to be the main factor driving the choice. The results showed that members chose an option based on what they can afford more than the benefits they felt they needed. Members sought an option that covered their chronic medication and provided adequate cover for their family, comprehensive hospital cover and/or for PMBs. However, benefits came to the fore for participants facing chronic conditions. The cost of the premiums was the key reason why members had changed their option. Table 3 shows that 58% of the participants changed their option due to the cost of their premiums

compared to 23% due to employment and 37% for other factors, mostly related to the participants' health status.

Table 3
Reasons why members changed their option

Variables (N=39)	Frequency (n)	Frequency (%)
Premiums too expensive	85	58
Change of employment	24	17
Others (mostly health-related)	37	25

Changes Principal Members Would Like To Make

In response to the open-ended question: "If you were a board member of your medical scheme, what three changes would you like to see?" The respondents' answers can be summarized into three sub-themes, cost, benefits and information.

Cost

Regarding costs, the main suggestion was that a GP should bill at a standard rate. Respondents also suggested that medical schemes allocate more funds for medication, lower the annual contribution and offer a rebate for consumers who have not used their medical aid for two years. Some respondents expressed the desire to a low membership contribution's cost, a strategy to tackle waste and fraud in the medical scheme's environment and more transparency with regards to the DSP contract.

Benefits

Regarding benefits, respondents expressed their desire to have more benefits without co-payments. Some suggested more PMB consultations, increase in GP and medical specialist consultations especially more dental and optometric benefits. A broader DSP network, outsourcing the right DSP, a full cover of prescribed drugs and an easy payment of claims were desired by some respondents. Some respondents expressed their aspiration to see a suitable plan for pensioners.

Information

Respondents suggested more transparency when the schemes provided information to their members. The respondents suggested that communication in terms of benefits should be consistent with what the schemes offered, and that no relevant information should be hidden. Some participants expressed a desire that schemes provide a concise information package, use of videos explaining certain aspects of

the schemes, define a clear dispute resolution mechanism and offer better communication between schemes and their members.

Factors Associated With Knowledge And Satisfaction

Fischer's exact test conducted showed that there was a strong association between perceived knowledge and satisfaction (p = 0.001). Good satisfaction with the medical scheme was related to good perceived knowledge. Fischer's exact test showed that there was no significant difference between good or poor perceived knowledge or satisfaction by gender, level of education or chronic disease. There was however a strong relationship between number of years of medical schemes and good perceived knowledge (p = 0.034). Good perceived knowledge and satisfaction were associated with a lesser number of years on the scheme (p-value = 0.034). Good perceived knowledge and satisfaction were only found in those with 10 years or less of their scheme's membership.

Members who joined their schemes through brokers had no better-perceived knowledge (p =0.396). The result showed a marginal relationship between income and good perceived knowledge (p = 0.093). However, there was a significant association between income and satisfaction (p = 0.045). Good satisfaction of medical schemes was associated with high income. There was also a strong association between knowledge of the PMBs and general knowledge of the medical schemes (p = 0.001). Better perceived knowledge of the PMBs is associated with good general perceived knowledge. Fisher's exact test showed that there was a significant relationship between good perceived knowledge and laying a complaint (p-value = 0.006).

Discussion

Though the Medical Schemes Act, No 131 of 1998 provides legal protection for medical schemes members' interests [12, 14], this study is one of the first non-proprietary studies conducted in the Republic of South Africa to assess the perceived knowledge of open scheme members and their satisfaction with their medical schemes.

The top four chronic diseases were asthma, cardiac failure, hypertension and thyroid conditions, consistent with the Council for Medical Schemes (CMS) data and with other studies conducted in South Africa on the burden of non-communicable disease [20, 21]. The increased incidence of non-communicable diseases in South Africa is a public health concern and has consequences for medical scheme membership costs.

Thirty-eight per cent of the respondents earned a monthly income of R30 000 (2 160 US$) or above. This raises the issue of affordability of medical schemes in South Africa which has a GDP/ capita of 6 281 USD and a high GINI coefficient. Kaplan highlighted the same concern in his findings [22]. McLeod and Ramjee pointed out that affordability constituted a major barrier to medical aid access in South Africa and was the greatest obstacle to the growth of the medical schemes industry [7]. Furthermore, the cost of

entry-level medical schemes options remains mostly unaffordable [7]. Very few members (14%) were on a high-level option. This had an implication for the benefits members are entitled to. Interestingly, members selected their option not based on their income or health needs, but on paying less, except when faced with a chronic disease.

The overall results showed that approximately 71% of participants had felt they had good perceived knowledge of their medical scheme, compared to 54% who scored above 61% for satisfaction. This finding was consistent with the Health Market Inquiry (HMI) report which showed a strong correlation between good perceived knowledge and good satisfaction [18]. A similar relationship was found in a study in the USA on Obamacare [23]. Seventy-five per cent of the participants in this study understood the benefits and cost involved before they joined their schemes.

The Healthcare consumer survey conducted in South Africa in 2016 found that 92% of their participants who used brokers felt that they received satisfactory information from them [18]. This finding is higher than ours where only 62% of respondents perceived their brokers to be knowledgeable about medical schemes. Additionally, our study found that there was no relationship between good perceived knowledge and joining a medical scheme through brokers. Good perceived knowledge between members joining a medical scheme through brokers and those without brokers was not statically significant.

The finding of a marginal association between perceived knowledge and income is consistent with Adewole's study in Nigeria [4]. This may imply that members with better income are more able to access various sources of information that could improve their knowledge. Inconsistent with Adewole's study [4], we found that the level of perceived knowledge and satisfaction was not associated with gender or suffering from a chronic disease. This dissimilarity may be due to a different study population and study setting. Adewole study's population comprised mostly of farmers, artisans, and traders in a rural area, whereas South African open scheme members live mostly in urban areas. Ackah and Owusu in Ghana showed that older individuals were more knowledgeable in health insurance [17].

The cost was one of the main reasons for choosing a medical scheme option. This finding is consistent with the Health Market Inquiry findings [18]. The PMBs are critical aspects of medical schemes policy in South Africa, introduced after exclusions and high costs resulting from cream skimming and risk rating by the industry. Out of pocket payments do not appear to affect the level of satisfaction of medical aid users. Though almost half of the respondents indicated that they had made out of pocket payments for services, they were still satisfied with their medical schemes. Our study is limited, as it does not determine the amount of money spent in co-payments. We also did not know if the members were reimbursed or not or if the OOPs were the result of the use of non-Designated Service Provider (DSP) GP or drugs not covered under the PMBs. The question of OOPs and satisfaction regarding PMBs needs further exploration. According to Mohammed, Sambo and Dong, Odeyemi and Nixon, out of pocket payments (OOPs) had a negative impact on consumers as it delayed health access and promoted the use of alternative treatment [16, 24]. They suggested that OOPs were related to patient dissatisfaction [16, 24].

Some respondents expressed the desire to tackle waste and fraud in the medical scheme's environment and more transparency with regards to the DSP contract. The prevalence of health care fraud in South Africa is estimated at 5–15% of the total health care expenditure [25]. In South Africa, the cost of fraud waste and abuse added 22 billion of Rand (US$1,584 million) to the annual cost of the private health care in South Africa [26]; however, is not the only driven reason of increased cost [27].

The respondents also indicated their wish to have access to a comprehensive benefits package at an affordable rate without co-payment. These desires are echoed in the new Medical Schemes Amendment Bill, which suggested a comprehensive benefits package fully covered by the schemes and the abolition of the PMBs [28]. However, the cost implication still needs to be determined.

The Medical Schemes Act 131 of 1998 promotes DSP arrangements between medical schemes and healthcare providers to ensure proper service delivery of the PMBs [8, 12, 14]. To bring down the costs of health care services, many medical schemes have contracted with DSPs. Although the anecdotal perspective is that consumers do not like DSPs, this study showed that 81% of participants were satisfied with the quality of care received from the DSPs. However, the proportion of participants who had a good perceived knowledge of DSPs for their medical schemes was only 55**%.** Eighty one percent of participants did not have access to DSPs hospitals where they lived, 9% were satisfied regarding the access to a designated GP when needed and only 46% were satisfied with the PMBs package. This could be because of the location of the hospitals and GP or the cap on the number of consultations allowed. However, other unknown reasons may explain this limited access. Old Mutual in its 2010 healthcare survey found that 60% of medical schemes members had a negative attitude to DSPs. In contrast to ours, this study did not evaluate the quality of service received from the DSPs, but rather, participants' freedom of choice as they wanted to choose their own doctors and found the DSPs to be inconvenient [29].

Regarding complaints against their scheme, the results showed that there was a statistically significant relationship between perceived knowledge and complaints. This emphasises the responsibility of the schemes to ensure that principal members have the necessary knowledge to get the most value out of their investment. Few participants made appeals against their medical schemes and the CMS. This is consistent with the study of Rodwin that showed that most schemes members chose not to appeal, even when they had a reasonable cause [30]. Respondents were quite satisfied when they appealed to their schemes, but both complainants to the CMS were very dissatisfied with the outcome.

Though this study has shown that open medical schemes' members had good perceived knowledge of and satisfaction with their medical schemes, the open questions enabled respondents to raise concerns regarding their schemes. The cost of the options remained a key concern to the point that the choice of an option was not related to the consumers' health needs, but the affordability of the option. The Health Market Inquiry pointed out that the lower cost option offered by the schemes were combined with lower benefits.[8] There was therefore a misalignment between the benefit design and the choice of option.

Study Limitation

The main limitation of this study was that to maintain confidentiality, the research team was not in direct contact with the interviewees and relied on the schemes to distribute the letters that linked to the URL of the questionnaire. Therefore, the researchers could not contact individuals who did not respond and had to rely on general reminders to the entire sample.

Conclusion

Medical schemes are pivotal in South African healthcare by providing financial risk protection for more than 8,8 million beneficiaries. This study showed that open medical scheme members felt they had good knowledge of and satisfaction with their medical schemes. These findings may also be used as a patient's satisfaction baseline under the NHI. It may also be useful to the medical schemes by pointing out the need to improve accessibility to hospitals, GP coverage, an extension of DSPs networks and the PMBs package. The study identified that there was a need for further development of the PMBs. This would require an expansion of the PMBs in its current form. The current PMBs review should offer a comprehensive benefits basket without co-payment for medical schemes members, as recommended by the Medical Schemes Act Amendment Bill [28].

Abbreviations

PMBS
Prescribed minimum benefits
DSPs
Designated Service Providers
OOP
Out-Of-Pocket payments
KAP
Knowledge, Attitudes and Perceptions

Declarations

Ethics approval and consent to participate

This study was carried out in accordance with the Declaration of Helsinki. The study was carried out in partial fulfilment of the requirements of a Master of Public Health degree at the University of Pretoria and was approved by the Research Ethics Committee of the University of Pretoria, Faculty of Health Sciences (Ethics Reference No.269/2018).

Informed consent was obtained from all participants prior to participating in the study. Participants were informed of their rights to refuse participation or to discontinue participating in the study. The informed questionnaire also highlighted the anonymity and confidentiality of the survey. No personal identifiers were collected from participants.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Author's contributions:

FM: Conducted the literature review, drafted the research protocol, interpreted the results, drafted the manuscript. EB: Assisted with the design and coordination of the study, survey questionnaire development, critical review of the draft manuscript.

ET: Conceived the research, assisted with the survey questionnaire, survey follow-up and drafting the manuscript. SO: Reviewed the study design and conducted the data analysis and interpretation of the results. All authors read and approved the final manuscript.

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