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**ADOPTION OF MANAGED CARE BY MEDICAL AID
SOCIETIES IN ZIMBABWE**

BY

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**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE MASTER OF
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DECLARATION

I, Silence Tendayi Gukushu, declare that this research is my original work. It has not been submitted for any award at any university. No organisation or institution influenced this study.

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DEDICATION

I dedicate this study to my husband Dr Tawanda Chombo and newborn daughter Runako Chombo.

ABSTRACT

Background: Globally healthcare costs have increased, and a significant proportion of this growth is attributable to moral hazard. Managed care tools are therefore widely used as healthcare cost containment strategies that attempt to moderate classical, provider and patient moral hazard. There is, however, no data on the extent of implementation of managed care tools by private health insurance organisations in Zimbabwe.

Aim: We investigated the adoption of managed care tools by medical aid societies in Zimbabwe and explored their perceptions of how managed care tools have affected their healthcare expenditure.

Methods: We used a cross-sectional study design and a sequential explanatory mixed method approach. Total population sampling was done for the quantitative component of this study, and six medical aid societies were purposively sampled for the qualitative component. Quantitative data were collected through a REDCap self-administered online survey and qualitative data were collected through online and telephonic in-depth interviews of medical aid society managers. The numerical data of the medical aid societies' key operational factors were summarised using medians and inter-quartile ranges. Proportions of the adoption of managed care and the types of managed care tools implemented by medical aid societies were calculated. We also calculated the proportions of agreement by the medical aid societies managers to the factors affecting managed care tools adoption. A six-step inductive thematic analysis was used to analyse the qualitative data of the perspectives of medical aid societies on the effects of managed care tools on healthcare expenditure.

Results: Our quantitative results show that 77.8% of medical aid societies have adopted managed care tools, with an average usage of 3.33 ± 1.80 managed care tools. The adoption of specific managed care tools was 90.5% for preauthorisation, 57.1% for gatekeeping, 52.4% PPN, 42.9% capitation, 38.1% disease management, 28.6% discounted FFS and 23.8% for formulary by the study medical aid societies. Based on our qualitative data analysis, all the participants highlighted improved cost control as one of the effects of implementing managed care tools.

Conclusion: Medical aid societies in Zimbabwe are adopting managed care tools into their operations. However, the use of some managed care tools is still low.

Keywords: Managed care, managed care tools, private health insurance, medical aid societies, private healthcare expenditure, cost containment

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ABBREVIATIONS AND ACRONYMS

LMICs – lower-middle income countries

MAS – Medical Aid Society

HMO – Health Maintenance Organisation

MCO – Managed Care Organisation

HREC – Wits Human Research Ethics Committee

MRCZ – Medical Research Council of Zimbabwe

FFS – fee-for-service

PPN – preferred provider network

HMO – Health Maintenance Organisation

OOP – out-of-pocket

PBM – pharmacy benefit management

AHFoZ – Association of Healthcare Funders of Zimbabwe

CHAPTER 1:INTRODUCTION

1.1 Background

Zimbabwe is a lower-middle income country whose weak health care financing system has largely contributed to its poor health outcomes (1). The country is behind in meeting the Abuja Declaration target of allocating 15% of the government's budget towards health since the allocation has remained between 5.9% to 10.3% (1,2). Government funding, primarily raised through value-added tax (VAT) and income tax, contributes 44.1% of total health expenditure (2,3). This allocation to health in the national budget is the highest single source of funding to the health system. However, private sources of funding make up 55.9% of total national health expenditure, comprising donor funding (26.7%), private health insurance (15.8%) and household out-of-pocket (OOP) expenditure (13.3%) (2,3).

Zimbabwe does not have publicly funded health insurance and 10% are funded by private health insurance (4,5). Membership to these private health insurance funds, known as medical aid societies in Zimbabwe, is on a voluntary basis (4). Some private health insurance funders in Zimbabwe operate as non-profit companies (mainly employer-based/ managed health funds) while others operate as for-profit companies (6). Private health insurers are regulated by the Ministry of Health and Child-care. However, there are concerns regarding the poor regulation of the health insurance industry in Zimbabwe where only non-profit health insurance funders are held to regulation concerning audits of accounting and financial reporting and upholding the rights of insurance subscribers (6). Private health insurances companies in Zimbabwe can also subscribe as members of the Association of Healthcare Funders of Zimbabwe (AHFoZ) (4). AHFoZ provides a forum of collaboration and a platform for rate setting with healthcare providers. However, AHFoZ membership is voluntary, therefore some medical aid societies can independently determine the procedures and fees covered by their plans (6).

There are multiple private health insurance providers in Zimbabwe (4); and because the private health insurance funding is highly fragmented and covers only 10% of the population, it offers minimum financial risk protection since small risk pools have limited cross subsidies (2). Additionally, Zimbabwean medical schemes have to manage the classical information asymmetry problems characteristic of all health care systems (7). In the market for health

insurance, information asymmetry problems arise because the buyer of health insurance knows more about their health risk than the insurer; while in health care provision it arises because the health care provider knows more about the need for health care services than the insured patient themselves. Information asymmetry leads to moral hazard which is a general problem of all health insurance systems (8,9).

Moral hazard in healthcare can be classified into three main types, namely classical moral hazard, patient moral hazard and provider moral hazard (9–12). Classical moral hazard is when an insured individual reduces precaution or preventative effort, while patient moral hazard is when an insured individual overuses medical care because they don't have to pay for it out of pocket. Provider moral hazard refers to the over-prescription of health care services to insured patients by healthcare providers (12) Moral hazard in the health insurance industry is related to waste (duplication of services provided, provision of unnecessary services), abuse (overcharging, over servicing, misrepresentation of services provided), and fraud (false claims, member-provider collusion) (8,13). Moral hazard therefore contributes to escalating health care costs (14).

In light of the scarcity of health resources, health insurance industries in a number of countries have adopted strategies such as managed care that attempt to moderate classical, provider and patient moral hazard (15–18). The term managed care is defined as a management process involving the contractual arrangement between health financiers and providers, and uses incentives, education, regulation and review of provider practice to improve the cost-effectiveness of care (15).

Zimbabwe which has a disproportionately high private health insurance expenditure of 15.8% as a share of the total health expenditure relative to a 10% population coverage and there is no data on the extent of implementation of managed care in the private health insurance industry. Therefore, the aim of this study was to investigate the adoption of managed care tools by medical aid societies in Zimbabwe as well as the perceptions of how these tools have affected private healthcare expenditure.

1.2 Literature review

1.2.1 History of managed care

Traditional indemnity insurance were health insurance plans that provided no incentive for health providers and the insured to ration health care services (19). With traditional indemnity insurance plans, the patient or the provider is paid a predetermined percentage of the charges on a usual, customary and reasonable basis for a given service (20). The traditional indemnity insurance system structure placed all the financial risk with the insurer therefore promoting classical, patient and provider moral hazard. Consequently, this model of insurance was associated with escalating health care costs and eventually led to the formation of managed care organisations to manage costs. Managed care plans were first implemented in the United States of America (USA) by employers, for example the Western clinic Tacoma of 1910 and the Kaiser Foundation health plans of 1937 (21). Later in the late 1960s, pilot Health Maintenance Organisations (HMO) began in some cities (17), and a wider utilisation of managed care plans began after the enactment of the HMO act of 1973. Other developed countries like Germany (22) and Australia (16), as well as a few other low- and middle-income countries (LMICs) like South Africa (Kinghorn, 1994), also started integrating managed care into their private health insurance systems in the early and mid-1990s.

However, in the USA the proliferation of HMOs caused a backlash from medical professional organisations regarding their lack of adherence to professional ethical standards (17,19). This was because HMOs engaged actuaries who developed strict guidelines which restricted the independence of health care providers to determine the best course of treatment for each patient (19,23). This was compounded by concerns from patients who argued that managed care was not sufficiently concerned with quality issues (19,24,25). In the USA, this led to the emergence of different types of managed care organisations utilising different managed care tools which exert varied control over its members and the services provided by health professionals (17). In some countries, including Zimbabwe, these managed care strategies are implemented in-house by the health insurers themselves (26). However, other countries including South Africa, more frequently make use of third-party managed care organisations.

1.2.2 Managed care tools

Managed care tools are used by health insurers to counteract moral hazard. Moral hazard is an underlying characteristic of the healthcare system. The three types of moral hazard that managed care tools are trying to counteract are classical moral hazard, patient moral hazard and provider moral hazard. Under classical moral hazard, insured members may take less disease preventative measures than they would otherwise do, and this may lead to higher rates of growth of healthcare costs when these insured members then seek healthcare services for otherwise preventable healthcare conditions (12,27). Under patient moral hazard, insured patients may access health services more than they normally do if not insured (12,27). They may also access more costly healthcare services as they may prefer expensive health technologies, and this also leads to increased healthcare costs. Under provider moral hazard, healthcare providers may provide more health services or may recommend more expensive technologies to insured patients than they would those without insurance (12,27). This also leads to higher growth rates of private healthcare expenditure. Private health insurers respond to classical, patient and provider moral hazard through the use of managed care tools. Managed care tools have risk-sharing and/ or healthcare services utilisation monitoring attributes (9,27). Managed care tools which use the risk-sharing mechanism include provider payment methods and preferred provider networks and those which use utilisation monitoring mechanisms include preauthorisation, disease management and formularies. The section below describes these managed care tools and explains how they counteract the different types of moral hazard.

1.2.2.1 Provider payment methods

Provider payment methods are methods used to remunerate healthcare providers and these methods endeavour to avoid waste, improve quality and accessibility (28). Provider payment methods create incentives that may reduce healthcare providers' moral hazard (7). Some of the provider payment methods that reduce provider moral hazard include capitation, discounted FFS and salaries (7,28).

Capitation payment involves paying healthcare providers a predetermined amount per insured member, regardless of the services provided (7). Capitation has cost-sharing attributes which come from the fact that healthcare providers share the full financial cost of their patients' health

services utilisation. This gives healthcare providers an incentive to reduce healthcare services utilisation either by providing preventative healthcare services or ensuring provision of quality health services so as to avoid repeat healthcare service utilisation for the same health condition by the same patient (27) Through capitation provider payment method, healthcare providers also bear the costs of services increase that come from referrals or hospitalisation of their insured patients. Therefore, capitation reduces total private healthcare expenditure by reducing provider moral hazard.

Discounted fee-for -service (FFS) is a provider payment method whereby a healthcare provider agrees to supply healthcare services on a FFS basis but with the fees discounted by a certain percentage from the healthcare providers usual charges (27). Discounted FFS is normally used to remunerate selected healthcare providers who would have been contracted by the insurer. What makes discounted FFS acceptable by healthcare providers is that insured members are given an incentive of seeking healthcare services from the healthcare providers that have been contracted by the insurer with low to no co-payments than utilise healthcare services from healthcare providers who have not been contracted with high co-payments (29). This therefore increases or at least maintains the patient volumes of the contracted healthcare providers thus making discounted FFS acceptable. The insurer therefore controls provider moral hazard since healthcare providers who are contracted by the insurer are expected to comply to standard treatment guidelines (29). Healthcare costs may therefore be controlled by minimising healthcare provider moral hazard and through discounted fees.

Salary is a fixed payment per period of time method of remuneration (7,30). This provider payment method is not dependent on the number of patients or healthcare services provided by the healthcare provider. Salaries are often pre-negotiated and to maintain productivity. Healthcare providers sign contracts that stipulate the services that they are expected to provide as well as the working hours (27). This provider payment method is often preferred by healthcare providers who serve underpopulated regions. Salary payment method provides an incentive for healthcare providers to reduce quantity of healthcare thereby controlling costs by minimising provider moral hazard.

Some countries' insurers use a mix of these provider payment methods. For example in Israel, some insurers remunerate health providers working in clinics operated by the insurer through a combination of monthly salaries and a monthly age-based capitation payment (31). They also pay independent physicians a capitation rate per member set unilaterally by the insurer (31).

1.2.2.2 Preferred Provider Network

Preferred provider network is a group of selectively contracted health care providers who have been given the responsibility of providing health care services for a health funder (32). Provider networks curb health provider moral hazard by requiring that contracted healthcare providers cooperate with utilisation management and standard treatment guidelines (29,32,33) which may reduce healthcare costs. In preferred provider networks, insurers can implement discounted FFS which further reduces healthcare costs. Healthcare providers accept to be contracted in preferred provider networks because insured members are given an incentive of seeking healthcare services from the healthcare providers that have been contracted by the insurer with low to no co-payments than utilise healthcare services from healthcare providers who have not been contracted with high co-payments (27). This therefore increases or at least maintains the patient volumes of the contracted healthcare providers thus making preferred provider networks acceptable. The most common preferred provider network model is for independent health insurers to contract health providers on a non-exclusive basis (31).

1.2.2.3 Gatekeeping

Gatekeeping is a concept used by health insurers to monitor healthcare service utilisation by placing restrictions on insured patients access to specialist healthcare services (34). The restrictions come from the fact that insured patients would need to obtain a primary healthcare provider referral before accessing specialist healthcare services. This limits patient moral hazard since primary care providers control access of insured patients to expensive specialist healthcare services and other expensive medical resources and therefore reducing healthcare costs (27). Countries like Israel, Swiss, USA, Netherlands and Germany have adopted gatekeeping as a utilisation management tool (17,31). The gatekeeping arrangements are however implemented differently in managing utilisation of healthcare resources. Evidence in literature of the efficiency of gatekeeping in managing healthcare resources utilisation varies. Some studies in the USA found that gatekeeping may be an efficient utilisation management tool (35), however other

studies in the USA and Europe found none or only marginal cost saving associated with gatekeeping.

1.2.2.4 Preauthorisation

Preauthorisation is a process where healthcare providers must obtain advance payment coverage approval from a health insurer before providing a healthcare service (especially expensive health services, new health services or health services with individualised clinical guidelines) (36). This facilitates the safe and standard guideline adherent provision of healthcare services because with preauthorisation, after a healthcare provider requests coverage of a healthcare service, the insurer determines whether the request conforms with existing standards (23,37). Healthcare services that follow the standard guidelines are authorised while those that do not are not authorised for payment coverage. Preauthorisation, therefore, may be associated with relevant savings in healthcare cost by minimising patient and provider moral hazard (38).

1.2.2.5 Disease management

Disease management is a term used to describe a wide range of approaches designed to mitigate the progression and quality of life impacts of health conditions as well as encourage adherence to recommended treatment plans (39). Patient self-care has been promoted as a disease management tool to improve quality of care, improve health outcomes and lower costs particularly for patients with chronic diseases. Chronic care management has been used synonymously with disease management in some articles (40).

Case management is the proactive process of coordinating, managing and reviewing of the care of individuals so as to identify individuals at risk of unplanned hospital admission (41). Those identified are proactively managed in an attempt to minimise symptoms and reduce hospital expense, although a large proportion of these admissions can be avoided through proper management of diseases especially chronic diseases (42). The widespread need for enhanced care and support measures for individuals with chronic diseases lead to a new arena in chronic disease management which helps in the mitigation of classical moral hazard. A study done in Germany showed a significant reduction in hospital admission of their insured members who enrolled into the disease management program and followed the program requirements than those who were enrolled but did not follow the program requirements.

1.2.2.6 Formulary

A formulary minimizes provider moral hazard by providing a limited dynamic list of carefully selected drugs that helps direct physicians to prescribe the most cost-effective medication for patient care (43). A drug is placed on the formulary after a pharmacy benefit management (PBM) team or organisation examines a number of factors which include the drug's price, effectiveness and safety(44). The intention of formularies is to eliminate marginally effective drugs and control costs (43). Formulary arrangements are between the insurer and contracted healthcare providers where the insurer only covers the cost of pharmaceuticals that are selected from the formulary list. Healthcare providers agree to formulary arrangements because insured members are given an incentive of purchasing pharmaceuticals from the healthcare providers that have been contracted by the insurer with low to no co-payments than purchasing pharmaceuticals from healthcare providers who have not been contracted with high co-payments (27). This therefore increases or at least maintains the volumes of pharmaceuticals purchased from the contracted healthcare providers thus making formularies acceptable.

1.2.3 Factors influencing adoption of managed care tools

It is important to consider the interdependencies that exist between interventions, human characteristics, organisational factors, and environmental factors. To understand the uptake of managed care in the private health insurance industry in Zimbabwe, we should consider the factors that have been shown to influence the adoption of managed care tools.

1.2.3.1 Evidence of the usefulness of managed care tools

With the adoption of managed care tools, private health insurers can counteract some of the underlying characteristics of the healthcare system which include moral hazard. Since moral hazard leads to higher growth rates of private healthcare cost, adoption of managed care tools may lead to containment of these costs. There is literature that provides evidence of the cost containment benefits gained from the adoption of managed care tools (9,45). A study by Perez (46), identified the significance of managed care in reducing healthcare costs in the USA. This study shows that there was a reduction of Medicaid spending by 2.9% for each 10% increase in managed care penetration. This work was complemented by studies done in the USA prior to 1997 which documented that hospital cost growth was lower in areas with higher managed care

penetration (47–49). Additionally, a study by Shen et al. (50) showed that managed care reduced health expenditure by a range of 2.5% to 5.5% per 10% HMO enrolment.

Other benefits attained from the adoption of managed care tools may include the maximisation of health outcomes and quality for the given healthcare spending, while considering the scarcity of resource. Empirical evidence, however, shows varied effects of managed care tools on health outcomes and quality of care. A study by Jean-Francois et.al (51) found that managed care enrollers had better subjective health status than non-enrollers. In contrast, some studies found that managed care non-enrollers reported significantly better subjective health status especially with regards to mental health (52,53). In terms of quality of care, some studies also showed no significant difference between the managed care non-enroller and enrollers (54,55). While some studies showed that managed care enrollers were provided lower quality of healthcare. For example, the study by Navarro et.al. (56) revealed that a managed care formulary tool only offered a limited number of the important sedative-hypnotic alternatives needed for the treatment of chronic insomnia, resulting in lower quality of care for elderly insomnia patients. In contrast, a study in the USA showed that there was no difference in mortality between intensive care unit patients who were either managed care enrollers or non-enrollers (57). In that study the debate around the sub-standard quality of care associated with managed care emanated from concerns by physicians about losing their professional autonomy through rigid preauthorisation procedures applied mostly by non-physicians (57).

Managed care is also associated with worsened adverse selection, where healthy people choose managed care health insurance plans while less healthy people choose more generous plans (58). Adverse selection reduces the mix of people in the risk pools of each health insurance plan, reducing cross subsidies. This was supported by a study by Bailey et.al. (59) which showed that MCOs which offered more generous plans were disproportionately selected by less healthy patients with expensive chronic conditions.

1.2.3.2 Organisational factors

The ability and capacity of a health insurance organisation to adopt managed care tools has been associated with the organisation's technological infrastructure, human resources capacity and financial readiness. Technological infrastructure refers to installed network technologies and

systems which provide a platform on which the managed care tools applications can be built (60). Human resources provide the knowledge and skills to implement managed care related tasks for example IT personnel, case managers and risk assessors. Adequate management information systems and clinical management systems are indispensable for linking patients, providers and insurers across the continuum of care as greater accountability is demanded for managed care practice (61). Investing in this complex technological infrastructure and employing competent personnel will accrue huge costs to the organisation. Therefore, financial readiness is also an important factor that influences managed care adoption (62). Financial readiness refers to the level of financial resources available to an organisation to pay for expected expenditure that will be accrued in the implementation of an innovation (62).

1.2.3.3 Environmental factors

Environmental factors are external factors that an organisation operates in, and these may include the industry's legal environment and the power balance between insurers and health providers. The legal environment is the legal framework that governs the day-to-day operations of an organisation (63). The legal environment is influenced by social, political, and economic factors and it shapes the behaviour of the organisations in a particular industry. For example in Israel, preferred provider network involves the selective contracting of health providers by a health insurance funder, however the legal environment and regulation of market competition may regard selective contracting as anticompetitive and discriminatory (31). Therefore, for health insurance organisations in Israel to comply to this regulation of the legal environment they should not implement the preferred provider network tool.

Another environmental factor is the power balance between insurers and health providers which also influences the adoption of managed care tools. For example, in Switzerland, due to the large number of health insurers contracting with a limited number of provider networks, the networks have stronger buying power than the insurers. The insurers, therefore, are less able to negotiate cost efficient provider payment methods and they pay networks health providers with fee-for-service which is not very efficient at containing healthcare costs (31).

1.2.3.4 Health providers' and insured patients' attitude towards managed care tools

Health care providers' and insured patients' attitude is either positive or negative towards managed care implementation. And can therefore act as either a facilitator or barrier to the adoption of managed care tools by insurers. A considerable number of empirical literatures has documented backlash by providers to the adoption of managed care tools by insurers as providers and patients place large value in therapeutic freedom and confidentiality. Loss of therapeutic freedom therefore reduces levels of satisfaction of both patients and provider (31). In addition to providers losing their clinical autonomy, their opposition also emanates from the increased administrative burden which require management and financial skills to carry out managed care processes (57). A study by Etter Jean-Francois et al (51) also shows the negative attitude of insured patients since 76% of insured patients chose fee for service plans over managed care plans mainly because fee-for-service plans allow for free choice of physicians. This negative attitude towards the use of managed care tools has therefore hindered or slowed down the use of managed care tools by insurers.

1.2.4 Perceptions regarding the role of managed care in reducing healthcare expenditure

Perceptions regarding the role of managed care in reducing healthcare expenditure serve as motivators or de-motivators to the adoption of managed care tools. Perception is a completely subjective process and is the result of a number of factors, namely the individual (the perceiver); the perceived object; as well as the context of the situation (64,65). An individual's reality is a product of their personal subjective experiences and background combined with their motives, attitudes and expectations (64). Health insurer perceptions of the role of managed care in reducing healthcare expenditure is influenced by the evidence of the impact of managed care on healthcare expenditure. Therefore, in this section, we will review the literature on the impact of managed care on healthcare costs and healthcare resources usage.

1.2.4.1 Evidence of the effect of managed care on healthcare costs

There are considerable variations of the effect of managed care on healthcare cost. Some studies found that managed care (66) or capitated payment (67) had no effect on the cost of care; other studies found that gatekeepers based plans (68) had reduced cost of care; however there was also evidence found in other studies that managed care had increased cost of care (69) and gatekeepers based plans had not reduced cost of care (70).

1.2.4.2 Evidence of the effect of managed care on resource use

Literature on the effects of managed care on healthcare resources also shows considerable variations. One study found that primary care providers believed that managed care reduced expenditure but not necessarily services (71). In another study more than 40% of specialists agreed that plans using gatekeepers approach reduced unnecessary tests and medical care costs for society, however most believed that necessary tests were not being performed (70).

Additionally, other studies agreed that managed care doctors (72,73) and capitation payment plan physicians (67) order fewer tests. In contrast, one study rated gatekeeping managed care plans and their traditional plans as equivalent in relation to the appropriate use of specific resources and cost of care (68). The gatekeeping plan was judged to have a significant negative effect on appropriate use of hospitals, laboratory test and specialist but controlled the cost of care better than the traditional plan did. On the other end, physicians in a national survey reported that managed care had no effect on the use of inappropriate services (69).

1.3 Statement of the problem

Globally healthcare costs have increased over the last two decades with an aggregate annual growth rate in spending of 5% between 2019 and 2023 and this growth rate is expected to continue increasing (74). A significant proportion of the growth in healthcare costs is attributable to classical, provider and patient moral hazard (11,12). For example, a study by Shrank et al. (13) showed that 25% of the escalation in health care system costs is due to over-servicing.

Unnecessary care negatively affects the efficiency and sustainability of healthcare financing (2). Considering the scarcity of health resources, it is therefore logical for health insurance organisations to adopt managed care strategies that mitigate moral hazard and help improve how existing financial resources are spent. Some countries, like the USA and Switzerland, have provided evidence on how managed care tools have helped contain healthcare expenditure (18,46,50). There is, however, limited data on the extent of managed care implementation in LMICs. There is no information about the extent to which managed care tools and techniques have been adopted by the Zimbabwean medical aid industry.

1.4 Justification

The health insurance industry bears the brunt of escalating medical costs related to moral hazard. However, there is evidence that managed care tools can have a positive effect on stemming the growth of private health care spending (18,22,46,50). Investigating the use of managed care tools by the medical aid societies in Zimbabwe, and exploring the factors that influence their uptake, may provide insight into the acceptability and rate of adoption of managed care in Zimbabwe. This will provide useful information needed for increasing the utilisation of these interventions to improve the efficiency and sustainability of private healthcare expenditure in Zimbabwe.

1.5 Research questions, aim and objectives

1.5.1 Research questions

The study sought to answer the following research questions:

What managed care tools and techniques have been adopted by Zimbabwean medical aid societies for the containment of healthcare expenditure in the year 2023? What factors have influenced the adoption of managed care tools by Zimbabwean medical aid societies in the year 2023? What are the medical aid societies' perceptions regarding the role of managed care in reducing healthcare expenditure in Zimbabwe in the year 2023?

1.5.2 Aim

The overall aim of this study was to investigate the adoption of managed care tools as well as the perceptions of how these tools have affected healthcare expenditure of the medical aid societies in Zimbabwe.

1.5.3 Specific objectives

The specific of this study were:

1. To describe the key operating factors of medical aid societies in Zimbabwe in 2023.
2. To establish the types of managed care tools that have been adopted by different medical aid societies in Zimbabwe in 2023.

3. To describe the factors influencing the adoption of the managed care tools by medical aid societies in Zimbabwe in 2023.

4. To explore the medical aid societies managed care managers' perceptions regarding the role of managed care in reducing health care expenditure in Zimbabwe.

CHAPTER 2: METHODOLOGY

This chapter introduces the methods for this study in a detailed manner. It outlines clearly how the researcher answered the research questions through discussing the study design, study setting, target population, sampling technique, data collection method, data management and analysis method as well as ethical considerations.

2.1 Study design

A cross-sectional study design using a sequential explanatory mixed method approach was used. The study was cross-sectional because data relating to the outcome of interest and risk factors were collected over a short period of time (75,76). The study used a two-phase sequential explanatory approach where quantitative data were collected and analysed first, and then qualitative data were collected and analysed based on the quantitative results (77). The qualitative results were used to explain the quantitative results. The study investigated the types of managed care tools that have been implemented in the private health insurance industry in Zimbabwe, as well as the possible risk factors that influenced the adoption of the managed care tools. The advantage of using a cross-sectional design is that it was not expensive and enabled the measurement of multiple outcomes and multiple risk factors (76). Cross-sectional studies may be purely descriptive or used to investigate association between outcomes and risk factors. However, analytical cross-sectional investigations are limited since both the outcome and the risk factors are measured at one point in time, therefore this gives no indication of the direction of events i.e. whether the risk factors precede the outcome or vice-versa (75–77). This study design was used for this study as it is an important first step in investigating the causal relationship between the perceived usefulness factors, environmental factors and organisational factors; and the adoption of specific managed care tools by medical aid societies in Zimbabwe (75).

A mixed method approach was used because data collected from the qualitative interviews explained the statistical results (77,78). Quantitative methods answered objectives 1, 2 and 3; while qualitative methods answered objective 4.

2.2 Study site

At the time of writing (December 2023) the private health insurance sector in Zimbabwe covered approximately 10% of the population (4,5). Private health insurance was provided through voluntary participation in medical aid societies and these medical aid societies are non-profit organisations (4). Some of the medical aid societies own health care services facilities thereby creating a possible conflict of interest where the insurer might end up underservicing its insured patients just to raise the medical aid society's profits (4).

2.3 Study population

The study population included all the medical aid societies in Zimbabwe in the year 2023. Ten of these medical aid societies were restricted to particular employees or industries, while twenty-six were open societies (2). Therefore, the study population comprised of thirty-six medical aid societies where three of the largest MAS covered 90% (at the time of writing December 2023) of the insured population in Zimbabwe in 2023 (4,79). The three largest medical aid societies are CIMAS, PSMAS and First Mutual.

2.4 Sampling and sampling technique

The quantitative component of this study included all the medical aid societies in Zimbabwe in the year 2023 so there was no sampling. Studying the whole population was influenced by the fact that the size of the population of private health insurance organisations in Zimbabwe is very small. The advantage of not sampling is that there is reduced risk of missing potential insights from the non-sampled units of the population hence improving analytical generalisation (77,80,81). However, non-response from research participants may then compromise analytical generisability.

We anticipated some non-responses, so we calculated the minimum acceptable sample size. The sample size calculation used was for the confidence interval of a single proportion, with 10% precision, a 5% Type I error (95% confidence interval), 80% power, an assumed prevalence of 50% and a finite population correction. The prevalence with the largest required sample size has been assumed since there was no previous studies on the proportion of medical aid societies which have adopted any managed care tools (82). Using the `svysampsi` command in STATA

with a finite population correction, the minimum sample size was calculated as 26, an acceptable non-response of 27.8%.

For the qualitative component of this study, six medical aid societies were purposively sampled.

2.5 Data collection method

Quantitative data were collected through online self-administered questionnaires. Emails were sent to all the medical aid societies inviting their organisation to participate in the study as participation in the study was voluntary. The email included a link to the REDCap self-administered questionnaire (see tool in Appendix A) as it was an online survey. The first part of the survey included an attached study information sheet explaining the purpose of the study. Consent to participate in this study was collected through this online survey. The self-administered questionnaire collected data on the key operating factors of each medical aid society, identified the types of managed care tools being used, and described the factors that influence the adoption of managed care tools by that medical aid.

Qualitative data were collected using in-depth interviews. The medical aid societies' managers were phoned to schedule the in-depth interview which were held through different online meeting platforms or telephonically rather than in-person due the widespread geographical locations of the medical aid societies. Interview participation information sheet, participation and audio-recording consent forms were emailed to the medical aid societies managers before the interview. The interview participation and audio-recording consent forms were signed to accept participation in the study and returned to the researcher through email.

The in-depth interviews were guided by a semi-structured interview guide (see tool in Appendix B). The interviews explored the perceptions of medical aid societies regarding the role of managed care in reducing health care expenditure as well as follow-up questions that came up from reviewing the participants' quantitative survey responses. The interviews were conducted by the researcher in English and lasted about 15-30 minutes. The interviews were recorded using a voice recording application. All the recorded audios were transcribed using the transcribe function in Microsoft Word.

To allow for the refining of the questionnaire and the interview guide before the actual study, a pilot study was conducted. The pilot questionnaire was administered to five experts in the field, while the pilot interviews were conducted with two experts in the field.

2.6 Measurement

A summary of this study's variables with their corresponding level of measurement are provided in Table 1. The key operating factors of medical aid societies were captured using several variables which included number of years medical aid society had been in operation, number of members, number of male beneficiaries and number of female beneficiaries. The variables for establishing the utilisation of managed care tools in private health insurance organisations included use of any managed care tool, utilisation of preferred provider networks and utilisation of pre-authorisation. The factors influencing the adoption of managed care tools were captured using independent which were categorised into perceived usefulness items, organisational factor items, and environmental factor items. These were derived from the review of several literature. There are 5 items under perceived usefulness, 7 items under organisational factors and 5 items under environmental factors. The perceived usefulness, organisational factor and environmental factor items were measured using a five Likert scale with strongly agree, agree, neutral, disagree and strongly disagree options.

Table 1: Measurement and data analysis for quantitative data

Objective	Variables	Level of measurement	Coding	Recoding
To describe the key operating factors of medical aid societies in Zimbabwe in 2023	Number of years in operation	Numerical		
	Type of scheme	Nominal	0 = Open 1 = Restricted 2 = Other	
	Number of female members	Numerical		
	Number of male members	Numerical		
	Proportion of members aged 60+ years	Numerical		
	Healthcare services invested in	Binary	0 = No 1 = Yes	
To establish the types of managed care tools and techniques that have been adopted by medical aid societies in Zimbabwe in 2023.	Use of managed care	Nominal	0 = No 1 = Yes 2 = Not Sure	0 = No 1 = Yes
	How managed care services are provided	Categorical	0 = In-house managed care department 1 = Out-source to another managed care organisation	
	Managed care tools adopted	Binary	0 = No 1 = Yes	
To describe the factors influencing the adoption of the managed care tools by the medical aid societies in Zimbabwe in 2023.	Perceived usefulness items Organisational factor items Environmental factor items	Ordinal	1 = Strongly agree 2 = Agree 3 = Neutral 4 = Disagree 5 = Strongly agree	0 = Agree 1 = Neutral 2 = Disagree

2.7 Data management and analysis

2.7.1 Quantitative data

STATA/IC 16.1 was used for data management and statistical analysis. The collected data were exported directly to STATA/IC 16.1 from REDCap and stored on my password-protected Google drive for safety. The data received by the researcher is being kept confidential. Initially, the dataset was cleaned and analysed for the study's participation rate. Since there was non-participation, finite population corrections were used for statistical analysis of the data in STATA using svy commands to adjust standard errors. The descriptive quantitative analysis to answer each objective was as follows:

2.7.1.1 Objective 1: Medical aid society's key operational factors

We assessed the numerical data for skewness and since the number distribution was skewed, medians and interquartile ranges were calculated. We analysed the proportions of the types of schemes as well as the gender profile of the medical aid societies. We also calculated the proportions of the healthcare service that the medical aid societies had financially invested in.

2.7.1.2 Objective 2: Managed care tools composition in the health insurance industry

We recoded the responses from the participants who had selected "Not sure" for the "use of managed care tools" to "Yes". This was done because the participants who had selected "Not sure" as their response to the use of managed care tools had also proceeded and selected "Yes" to at least one managed care tool that their medical aid society was using. The proportions for each category of the "use of managed care tools" was then calculated and presented as a pie chart. For the managed care tools that the medical aid society had adopted, we calculated proportions of the schemes and presented them as a bar chart. We also calculated the average number of managed care tools that each medical aid society was using. Lastly, we calculated the proportions of the medical aid societies that implemented managed care tools through in-house managed care departments as well as those that outsourced to another managed care organisation.

2.7.1.3 Objective 3: Description of factors influencing adoption of managed care tools

We recoded the participants' strongly agree responses to agree as well as strongly disagree responses to disagree. We then calculated proportions of the scheme for perceived usefulness items, organisational factor items and environmental factor items,

2.7.2 Qualitative data

A six-step inductive thematic analysis framework was used to analyse this study's qualitative data (83). The six-step thematic analysis involved a process of familiarising with the participants' responses, generating themes, reviewing themes, defining themes, and writing up. Transcripts were uploaded onto QDA miner lite version 2023 for the management of the data analysis. Inductive coding was used to identify emerging issues while reading through transcripts line by line. All codes were collapsed into six emerging themes and the themes are:

Theme 1: Effects of managed care tools on healthcare costs.

Theme 2: Effects of managed care tools on moral hazard.

Theme 3: Reasons for the reduction of healthcare expenditure.

Theme 4: Reasons for the successful implementation of managed care tools by medical aid societies.

Theme 5: Barriers to the adoption of managed care tools.

Theme 6: Strategies to increase the adoption of managed care tools and enhance effectiveness of managed care tools in healthcare expenditure containment.

Quotations from different participants were shared as part of the results to validate findings. For quality assurance and to ensure rigor in the analysis an Inter-coder agreement was conducted, where the researcher and supervisor analysed three transcripts. They both iteratively applied the codebook and definitions, discussed, and agreed on codes and themes. Any emergent and divergent themes were checked against the original themes and transcripts to ensure trustworthiness.

2.8 Ethical considerations

Ethical approval to conduct the study was obtained from Wits Human Research Ethics Committee (HREC) [HREC M220665] as well as the Medical Research Council of Zimbabwe (MRCZ) [MRCZ/B/2387] (see appendix).

Written informed consents were obtained from the medical aid societies personnel. Confidentiality and anonymity of research participants was upheld. Anonymised data were used

and all identifying information was coded with unique identifiers and links were kept separately. The collected data are stored on my password protected Google drive and will be destroyed 5 years after the study has been published.

CHAPTER 3:RESULTS

In this chapter, first we will present the quantitative results for the three objectives that explored the primary data obtained from medical aid society personnel self-administered online survey. This will be followed by the qualitative results from in-depth interviews conducted with medical aid society personnel, for objective four. The data ascertain the extent of the adoption of managed care tools by medical aid societies (MAS), describes the factors influencing the adoption of these tools as well as explore the medical aid societies' perceptions regarding the role of managed care in reducing healthcare expenditure in Zimbabwe.

3.1 Quantitative results

3.1.1 Objective 1: Medical aid societies' key operational factors

A total population sampling of 36 medical aid societies was selected to participate in the online survey. Nine indicated they did not want to participate, leaving 27(75.0%) responses for analysis. Table 2 summarises the key operating factors of the medical aid societies which responded to the online survey. The medical aid societies had been in operation for an average of 14 [5.0 – 25] years. They operated predominantly as open schemes 24(88.9%), while only 3(11.1%) operated as closed schemes. The gender profile of the membership showed a higher medical aid enrolment by females of 51.9% than males. Additionally, the average proportion of medical aid members above the age of 60 years 7.0 [5.0 – 15.0] %.

Table 2: Key operating factors of respondent medical aid societies in the year 2023

Variable	Attribute	Frequency, n (%)
Scheme type	Open	24 (88.9)
	Close	3 (11.1)
Number of medical aid members by gender	Males	923 399 (48.1)
	Females	995 490 (51.9)
*Number of years MAS has been in operation	Median [Q ₁ – Q ₃]	14 [5.0 – 25.0]
*Number of packages	Median [Q ₁ – Q ₃]	6.0 [5.0 – 7.0]
*Proportion of medical aid members aged 60+ years	Median [Q ₁ – Q ₃]	7.0 [5.0 -15.0]

**Data not in the n (%) format*

Table 3 outlines the healthcare services that the medical aid societies had financially invested into. Most of the medical aid societies had integrated pharmacies 15(55.6%) into their operation, closely followed by clinics 14(51.9%), and the least integrated was rehabilitation services 5(18.5%).

Table 3: Proportions of medical aid societies financially investing in healthcare service

Healthcare services	Participant's Response		Total
	Yes n (%)	No n (%)	
Pharmacy	15 (55.6%)	12 (44.4%)	27(100%)
Clinic	14 (51.9%)	13 (48.1%)	27(100%)
Dental services	12 (44.4%)	15 (55.6%)	27(100%)
Laboratory services	11 (40%)	16 (59.3%)	27(100%)
Imaging services	10 (37.0%)	17 (63.0%)	27(100%)
Hospitals	8 (29.6%)	19 (70.4%)	27(100%)
Optometry	8 (29.6%)	19 (70.4%)	27(100%)
Medical emergency transport	6 (22.2%)	21 (77.8%)	27(100%)
Rehabilitation services	5 (18.5%)	22 (81.5%)	27(100%)

3.1.2 Objective 2: Managed care tools composition in the health insurance industry in Zimbabwe

Figure 1 and Table 4 outline utilisation of managed care tools by the medical aid societies. 77.8% [95% CI: 68.3% - 85.0%] (Figure 3) of medical aid societies utilised managed care tools in 2023. They used an average of 3.33 ± 1.80 [min-max: 1-6] (Table 4) different managed care tools. Figure 2 provides a breakdown of the implementation of different managed care tools. The most utilised managed care tool by the medical aid societies is preauthorisation (90.5%) while the formulary (23.8%) was the least utilised. Most medical aid societies [19(90.5%)] have implemented managed care tools through setting up an in-house managed care department, while on 2(9.5%) outsource to another managed care organisation.

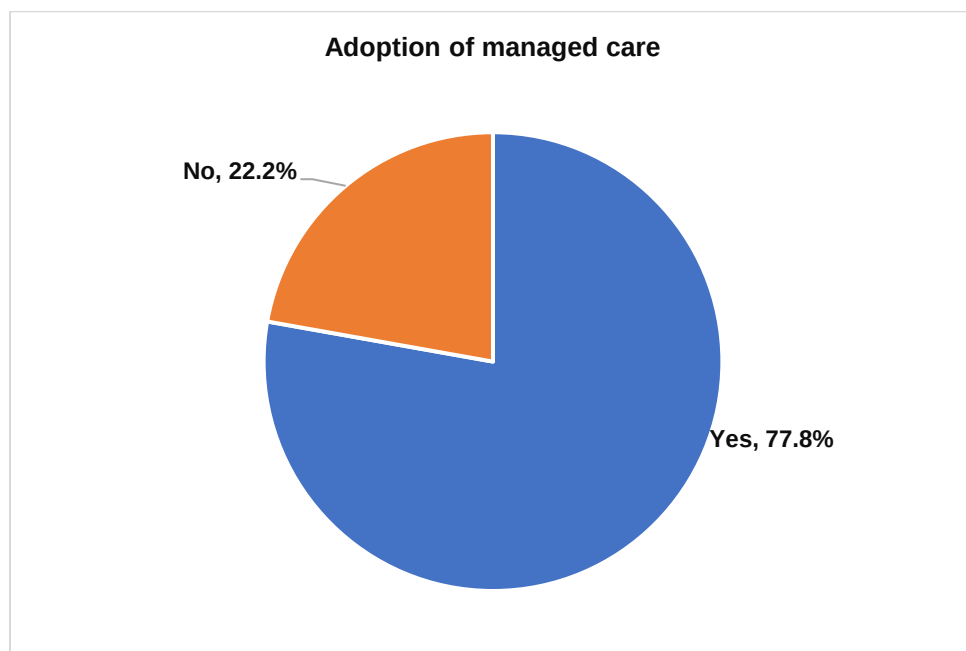


Figure 1: Adoption of managed care by medical aid societies in the year 2023

Table 4: Average number of managed care tools that medical aid societies were using in the year 2023

	Min	Max	N	Mean $\pm$ SD
Average number of managed care tools that have been implemented in your medical	1	6	21	3.33 ± 1.80

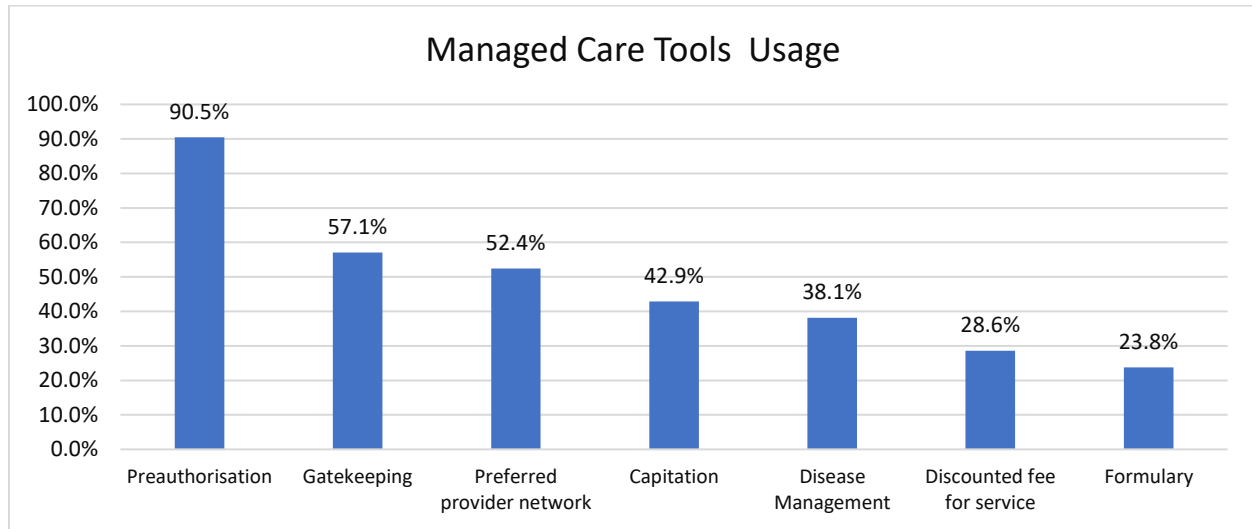


Figure 2: Use of different managed care tools

3.1.3 Objective 3: Description of the factors influencing the adoption of managed care tools.

The results of managed care tools perceived usefulness are summarised in Table 5. Overall, the respondents that had implemented managed care tools in their medical aid societies agreed with most of the perceived usefulness items. Most participants 20(95.2 %) agreed to the ease of use of managed care tools, and only a few participants 4(19.1%) associated managed care tools with adverse selection. 16(76.2 %) and 15(71.4%) respondents perceived managed care tools as being useful in decreasing the overall healthcare costs as well as improving the health status of medical aid society members respectively.

Table 5: Proportion of participant's perceptions on perceived usefulness items

Perceived usefulness items	Participant's responses			
	Disagree n(%)	Neutral n(%)	Agree n(%)	Total
I find managed care tools easy to use.	1(4.8%)	0(0.0%)	20(95.2%)	21(100%)
In our medical aid scheme, managed care tools are useful in decreasing the beneficiary's overall healthcare costs	0(0.0%)	5(23.8%)	16(76.2%)	21(100%)
Managed care tools are useful in improving the health status of our medical aid schemes members.	0(0.0%)	6(28.6%)	15(71.4%)	21(100%)
Use of managed care tools by health care providers improves the quality of their healthcare services in Zimbabwe.	0(0.0%)	7(33.3%)	14(66.7%)	21(100%)
In our organisation, managed care is associated with adverse selection; where healthy people choose managed care health insurance plans, and less healthy people choose less restrictive plans.	12(57.1%)	5(23.8%)	4(19.1%)	21(100%)

Table 6 shows the results of organisational systems and technological infrastructure that had been implemented by medical aid societies which had adopted managed care tools. The respondents agreed to having implemented most of the organisational systems and technological infrastructure. Most participants 18(85.7%) agreed to providing managed care information systems as well as having competent personnel that manage the managed care department. In terms of medical aid societies creating awareness of managed care tools, only 16(76.1%) and 15(71.4%) respondents indicated that they were actively creating awareness to healthcare providers and medical aid members respectively.

Table 6: Proportion of participant's perceptions on organisational factor items

Organisational factor items	Participant's responses			Total
	Disagree n(%)	Neutral n(%)	Agree n(%)	
Our medical aid scheme provides managed care information systems for our staff.	1(4.8%)	2(9.5%)	18(85.7%)	21(100%)
Our medical aid scheme has competent personnel that run the managed care department.	0(0.0%)	3(14.3%)	18(85.7%)	21(100%)
Our medical aid scheme creates awareness of managed care to health care providers.	1(4.8%)	4(19.1%)	16(76.1%)	21(100%)
Our medical aid scheme provides managed care information systems for healthcare providers that use managed care tools.	12(57.1%)	3(14.3%)	6(28.6%)	21(100%)
Our medical aid scheme has funds to invest in the adoption of managed care.	4(14.8%)	6(22.2%)	17(63.0%)	21(100%)
Our medical aid scheme provides managed care information systems to our medical aid scheme members.	7(33.3%)	4(19.1%)	10(47.6%)	21(100%)
Our medical aid scheme creates awareness of managed care tools to our medical aid scheme members	1(4.8%)	5(23.8%)	15(71.4%)	21(100%)

Table 7 summarises the description of the legal and healthcare environment that the medical aid societies were operating in. Most participants 19(70.4%) agreed to a high managed care tools adoption rate in the private health insurance industry (competitive necessity), as well as the availability of a legal framework that governs medical aid societies in Zimbabwe 17(63.0%). Most respondents agreed that healthcare providers and medical aid members resistance to use of managed care tools [12(44.5%), 10(37.0%) respectively] acted as barrier to the adoption of managed care tools.

Table 7: Proportion of participant's perceptions on environmental factor items

Environmental factor items	Participant's responses			Total
	Disagree n(%)	Neutral n(%)	Agree n(%)	
Most medical aid schemes in Zimbabwe have adopted managed care tools.	4(14.8%)	4(14.8%)	19(70.4%)	27(100%)
The legal framework that governs medical aid schemes in Zimbabwe supports the adoption of managed care tools.	7(25.9%)	3(11.1%)	17(63.0%)	27(100%)
A limited number of healthcare providers in Zimbabwe are willing to join health insurance preferred provider networks.	10(37.0%)	7(25.9%)	10(37.0%)	27(100%)
Health insurance members resistance to the use of managed care tools is a barrier to the adoption of managed care by our medical aid scheme.	4(14.8%)	11(40.7%)	12(44.45%)	27(100%)
Health care providers resistance to the use of managed care tools is a barrier to the adoption of managed care by our medical aid scheme.	9(33.3%)	8(29.6%)	10(37.0%)	27(100%)

3.2 Qualitative results (Objective 4)

The qualitative objective was to explore the perceptions of medical aid societies regarding the role of managed care tools in reducing healthcare expenditure. A total of 6 medical aid societies managers participated in the in-depth interviews and from the narratives, inductive thematic analysis yielded 6 themes to describe the perceptions of medical aid societies using managed care tools.

3.2.1 Theme 1: Effects of managed care tools on healthcare costs

Cost containment was predominantly highlighted as one of the effects of managed care tools on healthcare costs by all the participants. Some of the participants also acknowledged how

managed care tools had given them a cost management advantage while operating in a poorly regulated healthcare industry:

“In Zimbabwe, the issues around cost, especially with the widely unregulated healthcare industry where service providers basically do what they see fit. So, you will find within the same discipline those service providers would be billing different things, so managed care came in primarily to address issues to do with cost and ensure that the Members are receiving treatment but in the most cost-effective manner.” Participant 5

Furthermore, some of participants also experienced a cost risk-sharing effect of managed care tools, which augmented the reduction of healthcare expenditure.

“But when we are talking about the alternative reimbursement model, we are talking about global billing, we are talking about capitation because some of these models there is shared risk with the service provider. So, there is shared risk with the hospital because the hospital is now responsible for ensuring that the doctors that they work with have good outcomes because at the end of the day, the end game is trying to control costs. So, we try to ensure that we share the risk.” Participant 4

While all the participants pointed out the positive cost containment role of managed care tools, some participants highlighted how some tools did not reduce healthcare expenditure.

“...but the business thought that preauthorization would bring cost containment. It didn't, it just made people aware of the bills that are going to come through because if a person needs to get admitted, you're not going to avoid the hospitalization by preauthorization”. Participant 5

In addition, one participant recalled the preferred provider network tool that they had implemented which increased the medical aid society's costs.

“...but we at one point introduced what we called dual access, which was a preferred provider group. But unfortunately, it didn't last long. It turned out to be not a cost saver, but an expense to the organisation.” Participant 6

3.2.2 Theme 2: Effect of managed care tools on moral hazard

Wastage of the health insurance fund arising from unnecessary seeking of healthcare service by insured members emerged as a critical challenge that motivated medical aid societies to adopt managed care tools to help in managing the healthcare resources. Some of the participants pointed out that adoption of managed care tools reduced unnecessary healthcare visits by their members.

“...there are some members that continue see the doctor for a slight illness, to get certain drugs that are now not prescribed anymore that the medical aid society cannot pay for. So, this [managed care tools] has also restricted the going to see providers by members when it's not really necessary”. Participant 3

Many study participants also highlighted that some managed care tools like case management reduced wastage of the health insurance fund that comes from the unnecessary duplication of healthcare services by medical aid members.

“And I think the other main motivation was to do with case management, so you'll find that you know Zimbabwe the services are quite fragmented, and patient may get blood tests done and an admission and then have the very same blood tests repeated when they then see another practitioner at another facility. And that, of course, would increase the cost etc. So managed care has kind of come in to assist in that sort of case management that will then avoid duplication of service.” Participant 5

In addition, wastage of the health insurance fund also arises from healthcare providers providing unnecessary healthcare services to insured members. Some of the participants shared their experiences of how case coordinators reduced the mismanagement of healthcare resources.

“So, we're looking even for hospitalisation, we have case coordinators who are also on the ground, ensuring that Members they don't overstay in hospitals. They also work together with the doctors in charge who would have admitted them to ensure that the doctor is aware that this Member doesn't have a bottomless pit of benefit...”. Participant

4

Closely related to the issue of the wastage of health insurance funds was the issue of how hyperinflation in Zimbabwe also eroded the health insurance fund. Some participants shared their views about how managed care tools helped manage the medical aid fund in a hyperinflationary economic environment.

“And you understand with the background of Zimbabwe that we are facing hyperinflation. So, you would find that even with that 90% of our membership being civil servants, we do not increase subscription as and when we would want them to be increased so that they are in line with the hyperinflationary effect because you have to negotiate with government and that sort of thing. So as an organization after that realisation that because we are not really increasing our subscription so that we could match with what is happening out there with healthcare costs, that’s when the aspect of managed healthcare was mooted out”. Participant 4

3.2.3 Theme 3: Reasons for the reduction of healthcare expenditure

According to most of the participants, the mechanisms through which healthcare expenditure was reduced was, firstly, managed care tools allowed medical aid societies to track their medical aid member needs.

“So, within health risk and utilization [a branch of the managed care department at the organisation] we have population and health. It's actually looking at the population demands that we have, people are aging and when one ages, you know there's a lot of demand in terms of medical treatment, because people, they are more vulnerable to so many diseases, some of these chronic diseases, they come out when one is elderly. So, they [the population and health branch] try to manage that.” Participant 4

“...the robust information technology system and we are able to check membership where they get their services where they stay and the kind of services that they need....” Participant 6

The other mechanism through which managed care tools reduced healthcare expenditure was through the ability of medical aid societies in avoiding unnecessary hospital admissions.

“And then you can also track and ensure that your members are following their routine checkups and taking their medication, and we also deliver medication to these members, making it convenient for them to be taking their medication or to be following on their medications. So, in a way, you're not going to be surprised if one or quite a number of your members have been getting admissions because they have not been following their medications”. Participant 6

These mechanisms therefore aligned the medical aid societies' cost management plan to the needs of the medical aid members.

“First from the planning of cost control: The one that we use [information technology], we have the percentage of our members that have chronic diseases. So, you can plan to see how much we're going to spend on this person per month when it comes to their medication, and other routine tests that they have to do. So, it's very critical too when it comes to cost containment and cost management”. Participant 6

Additionally, some of the participants highlighted that managed care tools provided a means for tracking medical aid members or healthcare providers who abused the medical aid fund. This mechanism therefore minimized the healthcare cost related to abuse and cheating.

In terms of reducing abuse and fraud the skilled people or personnel in that department have helped in a lot of ways in reducing fraud and a number of cases have actually been reported of where members would fill in a claim form on a monthly basis maybe give to the medical aid for refund or payback for services that have not been given to them. So, this has enhanced the financial benefits.” Participant 3

3.2.4 Theme 4: Reasons for the successful implementation of managed care tools by medical aid societies

Many participants explained that to successfully implement managed care tools, the medical aid societies had to integrate a managed care department into their organisations and employ competent personnel to run the daily operations of the department. The integration of managed

care services into the medical aid societies' operations therefore requires medical personnel input and not just technical or financial input to ensure effectiveness of managed care tools.

"We also have a group of medical personnel within our organisation group that has also helped in making sure that the tools are effective." Participant 6

Other participants also highlighted that medical aid societies stakeholder engagements reduced resistance to the implementation of managed care tools.

"...ensure that the communication channels are open, that we are opening up and we explain what we are doing because I think just doing things without explaining to people at times you create that resistance to that animosity. So, we've tried as an organisation to communicate to the service providers, we are also doing our fair share with the Members so that they understand that we are not limiting them, but we are trying to protect, you know, the benefit". Participant 4

One participant recounted that managed care allowed medical aid societies to interact with insured patients, as well as act as a mediator between healthcare providers and insured patients. This resulted in increased customer satisfaction and further reduced resistance to the use of managed care tools by medical aid societies.

"...at the moment I think we are on top of the situation because we even visit our patients when they are admitted just to go and see where you are how comfortable you are and at the end of the day if we are not happy with the quality of service we contact the authorities or even advocate to the doctors to transfer you out of that particular hospital to another hospital." Participant 1

"So that our main objective of ensuring that our members are comfortable wherever they are admitted or whenever they need some treatment inside or elsewhere outside the country and we become a link to try and find out and source for them and negotiate for them. As you are aware the pricing in Zimbabwe is just way up, so we negotiate on their behalf with service providers so that there is downward value or cost of their operation or treatment that they will be getting". Participant 1

3.2.5 Theme 5: Barriers to the adoption of managed care tools

Although some managed care tools were widely implemented by medical aid societies, participants pointed out challenges that limited the adoption of managed care tools. Most participants were dissatisfied with the partial commitment of key stakeholders, particularly the medical aid society executives, healthcare providers and medical aid members, to the exhaustive implementation of managed care systems.

“Well, the major challenge is finance. So, the big guys are not health people, so they don't believe in public health intervention. They just think it's a client retention tool. So, they don't want to invest too much into that”. Participant 2

“Probably buy in from some of the service providers like when you do hospital visits, you are engaging these service providers to say, OK, you've got this patient X who has been admitted here for, so many days we are looking at the fund. The fund is not a bottomless pit. The hospitalisation benefit is being depleted, so probably some of the doctors would feel as if you were infringing into the patient confidentiality aspect, but as a funder we are an interested party because they've got benefits that they're utilising. So, there's that aspect of the, the lack of buy in from some of the service providers or probably the members themselves when you're trying to probably guide them where to go to probably, they will feel that you are limiting them...”. Participant 4

The fact that managed care strategies were a fairly new concept in the Zimbabwean private health insurance industry, also brought challenges in the implementation of managed care tools. These included the misunderstanding of the managed care concepts by the key stakeholders and the fact that the effects of the implementation of managed care tools are not immediate but more long-term and not always that obvious, some participants highlighted that:

“...getting non-medical executives to understand that firstly the return from managed care is not immediate, just as wellness it's not immediate. You will not see an immediate drop in cost, it's a long-term investment you know. Where would even current literature speak about you know, people are reviewing Medicare and all that 20 years later and they're thinking, OK, what sort of impact has this had on healthcare. So, getting that understanding from the executives that you will not see immediate returns, that it's a

long-term project that has a lot of, you know, behavioural change, not just in member behaviour but in service partner behaviour over, ...". Participant 5

On top of that, healthcare providers exhibited selective preferences to the use of managed care tools by medical aid societies. According to a few participants, some healthcare providers only preferred managed care campaigns when they included wellness programmes as such programmes would give them a free opportunity to market their private surgeries.

"You know, I don't know about healthcare providers because, but I think a lot of them, yeah would like to be involved not really because they're interested in the managed care tools. For instance, they like wellness more. They call us and say can you please can you please call us to your wellness events because they want to advertise their business through these events. But on the other hand, when you talk about case management, they evade case management..." Participant 2

Not surprisingly, in terms of prevention and wellness screening, a major limitation has been the pace of implementation of screening non-communicable diseases as this is an important component of the disease management managed care tool.

"Then of course your prevention and wellness screening, I think picking up the diseases before they become issues. Zim [Zimbabwe] hasn't done very well in terms of actual screening for conditions except for know your cervical cancer, breast cancer but you know that there are non-communicable diseases such as diabetes, hypertension, which have now become a real a burden on our society, thing is we still have quite a way to go. But [name of medical aid society] was one of the first to then say, look, we will reimburse for screening because we know that downstream it is going to save costs if we pick up a disease early and intervene early." Participant 5

In as much as some medical aid societies had made huge strides in implementing most managed care tools, they now faced a bigger challenge of difficulties with evaluating the effectiveness of managed care tools in reducing healthcare expenditure. Evaluating the effectiveness of managed care tools gives these tools the credibility needed for medical aid societies which have not yet adopted managed care tools to confidently invest in their comprehensive implementation.

Therefore, the unavailability of such evaluations is a barrier to the implementation of managed care tools as it is difficult to convince medical aid societies to invest in managed care adoption.

“But you know, I can't really measure because we don't have a tool that measures like to what extent is managed care reducing claims ratio. There is no tool, and we are trying to develop one.” Participant 2

“You know, like when you are just starting something out. When I say 10 years, yes, it's still starting something out. Yes, we've had indicators where we've had our highs where we have actually tried to achieve cost containment because we've negotiated. We tried to negotiate, also tariffs, so we've had some positive in that regard. But globally, you know, like with inflation in time, you can't really say we've achieved, or we haven't achieved. It becomes tricky, especially where inflation is concerned, but where we've had our achievements, where we've negotiated tariffs, yes, probably we will be evaluating on probably consultation and say, OK, we've had a saving day. You know we've had a saving here. We've tried to do a Wellness program with certain organizations. The feedback that we then get from the Members because like with Wellness you reduce hospital visits because they are more conscious of their health.” Participant 4

According to a few participants, the other factors that limited the implementation of managed care tools by medical aid societies included, challenges of medical aid members withholding important information during the enrolment process and failure to reach some medical aid members who lived in remote areas.

“Okay, some limitations are at member enrolment stage, where some members don't actually give out as much information as possible. So, you then get to know about some conditions when members are already enrolled and some of them would not have followed their medication or medical procedures and processes.” Participant 0

“...but we haven't really reached out to the whole membership because with ##### [Name of medical aid society] membership are government employees and most of them are in the rural areas they are in far in wide areas.” Participant 4

3.2.6 Theme 6: Strategies to increase the adoption of managed care tools and enhance effectiveness of managed care tools in healthcare expenditure containment.

Regarding the challenges of resistance to the implementation of managed care tools, some participants pointed out that engagement and education of healthcare providers and medical aid members would be an important strategy in increasing acceptance of managed care tools.

“I think because these are new concepts that are coming up, the aspect of engagement is very, very important because you do not want to shove things down people’s throats. These are new initiatives, I know that in some quarters, it takes quite a while to embrace some of these new techniques.” Participant 4

“We’ve been working with some of the service providers for quite a long time. And they understand how our system works because most of the abuse that came and that still comes, and that will continue to come. But through this we can work with them and having a relationship with them and communication with them the members and providers does help. It has enhanced effectiveness of these managed care tools in our organisation.” Participant 3

“And of course, the patient education, you know, patient education is this particular year we’ve been trying to drive the issues of generics versus brand medication, and you find that just that one thing has saved the fund quite a lot of money when patients began to question why you are giving me a brand over generic when I know that it does the same thing. So patient education is very effective.” Participant 5

One participant suggested the need for more financial investment into managed care systems so it could be implemented at a larger scale, and another also suggested adopting a research plan to address the implementation shortcomings that the medical aid societies are facing.

“I would suggest that managed care should be done on a larger scale. As we can see the impact when we are doing for just a few organisations. So, I would recommend that we put more finances into managed care so we can have a broader approach, where we impact a lot of organisations from the biggest to the smallest....” Participant 2

“I would say more research is also needed to continue to be better at managed care.”

Participant 3

Most participants highlighted that to enhance the effectiveness of managed care tools in containing healthcare expenditure, medical aid societies adopted strategic plans which included service integration. The integration of private health insurance services into healthcare services was a strategy that some medical aid societies were now viewing as a competitive necessity since other medical aid societies that had already implemented this strategy experienced cost saving benefits.

“I just want to say that managed care is the way to go in this environment I can take a closer look at big medical aid societies like ##### [name of medical aid society], maybe they've even added clinics to their portfolios so as to manage their members both in terms of finances and being healthy. So, it is especially helpful in our economy of Zimbabwe.”

Participant 3

“So, that's how I can respond to that, that look and at the end of it all, we have no control of what the other provider can be charging. But in your unit [MAS healthcare service strategic business unit], you have that control that you have. And at the end of it all, it's your members who will then benefit”. Participant 4

Furthermore, healthcare coordination and integration were pointed out as a strategy for reducing some wastage that arises from disintegrated healthcare provision.

“Improving the care coordination and integration with funders so you find that even in hospitals, you know in South Africa you will have funders stationed in hospitals. They're like case managers stationed at hospitals and they're the ones actually able to coordinate the care of that patient in tandem with the clinicians on site. So, you know, I think if people embrace that more, I think they'll be less wastage and better-quality outcome ultimately.” Participant 5

Finally, one participant suggested the use of data analytics would assist in predictive modelling and implementation of value-based reimbursement models where the healthcare provider's reimbursement level is conditioned on the patient's health outcome. Therefore, to implement

value-based reimbursement, the capturing and analysis of health services accessed by the insured patient against their health outcomes will be needed when insurers reimburse the healthcare providers. This provider payment method is efficient at managing healthcare costs as well as healthcare quality, since healthcare providers have the financial responsibility of assessing if the health service, they want to provide the insured patient does not outweigh the patient's health outcome.

“Just improving our use of data analytics across the country. This will be assisting with the predictive modelling and the data mining. That will ensure that your managed care tools are working and you're able to then pick up those at-risk patients and then intervene before disaster strikes. So, this one is key. Having service providers embracing technology so that they can capture these things in a way that you're able to utilize them. It's very, very important”. Participant 5

“Another issue is the value-based reimbursement models. This has been talked about for a long time and ##### [name of medical aid society] is currently moving towards that and in and part of it is measuring outcome. In Zimbabwe, we actually don't have a body that is actively measuring outcome so though the MDPCZ [Medical And Dental Practitioners Council of Zimbabwe] should be a repository of this information where you know somebody has to log, you know as A doctor or physician, for example, to log their cases and, you know, put in OK, look, the outcome, they got readmitted or they were discharged home after 10 days and you know to actually log their outcomes for their patient. This will then assist in coming up with these value reimbursement models because it's based on data, and I can go on”. Participant 5

CHAPTER 4:DISCUSSION

In this study, we investigated whether medical aid societies in Zimbabwe were using managed care tools, investigated the factors that influenced the uptake of managed care tools, as well as explored the perceptions of medical aid societies in Zimbabwe regarding how managed care tools affected healthcare expenditure. Our main findings will be discussed in this chapter.

4.1 Summary of key study findings

Our quantitative results show the finding that medical aid societies in Zimbabwe are adopting managed care tools, and this is supported by our analysis which showed an average usage of 3.33 ± 1.80 managed care tools by 77.8% medical aid societies. However, adoption of some tools has been gradual albeit hesitant as compared to the preauthorisation tool which has been adopted by most of the study medical aid societies. Our second finding that some of the perceived usefulness factors, organisational factors and environmental factors were perceived to affect the uptake of managed care tools by medical aid societies in Zimbabwe. This is supported by the proportions of medical aid societies that had implemented managed care tools that agreed to the perceived usefulness items (Table 6.), organisational factor items (Table 7.) environmental factor items (Table 8.).

Our main qualitative result shows the finding that medical aid societies in Zimbabwe perceive managed care tools as effective healthcare expenditure containment tools, and this is supported by the fact that all the participants mentioning cost controlling as one of the managed care implementation effects.

4.2 Critical analysis of findings

In this section, we will critically examine our findings relating to other studies in literature.

4.2.1 Adoption of managed care tools by medical aid societies in Zimbabwe

Our study found that medical aid societies in Zimbabwe are adopting managed care tools, however, there have been variations on which of the managed care tools and how the managed care tools have been implemented between the different countries as their health systems also differ. Most countries' private health insurance organisations make use of third-party managed

care organisations (15,16,21,22) as compared to Zimbabwe's integration of managed care departments into the medical aid society organisations. The fact that the integration of managed care departments into private health insurance has worked in Zimbabwe, supports the addition of this system to the existing repertoire of how managed care systems can be implemented.

4.2.2 Factors influencing the adoption of managed care tools

4.2.2.1 Influence of perceived usefulness factors on adoption of managed care tools

Overall, both our quantitative and qualitative findings show that medical aid societies in Zimbabwe perceived managed care tools to have healthcare cost savings benefits and cost risk sharing benefits. The finding that adoption of managed care tools has cost containment benefits as well as cost risk sharing benefits has been confirmed in a number of studies (9,45,46,68,84). However, some interview participants in our study highlighted that some of the managed care tools failed to reduce healthcare expenditure. This discrepancy is also complemented by a study by Kaiser Family Foundation (69) which found that most doctors believed that managed care increased the cost of healthcare as well as a study by Ellsbury et.al (70) which revealed that gatekeeper plans had not reduced cost of healthcare.

66.6% of our study participants agreed to managed care tools helping in improving the quality of healthcare. Contrary to our finding, one study revealed that the managed care formulary tool only offered a limited number of the important sedative-hypnotic alternatives needed for the treatment of insomnia, resulting in lower quality of care for elderly patients and has been associated with reduced quality of care (56). However, a study by Sekhri (57) showed that there was no difference in mortality between intensive care unit patients who were either managed care enrollers or non-enrollers (57). Sekhri (57) theorises that substandard quality of care due to implementation of managed care tools emanates from concerns by healthcare providers losing their professional autonomy. The other factor item on perceived association of managed care tools with adverse selection had the lowest proportion of agreement in our study, but studies by Bailey et al (59) and Bardey and Buitrago (58) demonstrated that managed care tools reduced the mix of people in the risk pools of health insurance plans. However, these differences may be due to the differences in study design.

4.2.2.2 Influence of organisational factors on adoption of managed care tools

Our quantitative and qualitative finding that most medical aid societies agreed upon was that providing managed care information systems and competent personnel that manage the managed care department influenced their implementation of managed care tools concurs with a study by Embry et al (61). The authors posit that adequate management information systems and clinical management systems are indispensable for linking patients, providers and insurers across the continuum of care since managed care practice demand greater accountability (61).

Our second finding that financial readiness was also an important factor that influenced the implementation of managed care tools, lends support to the view that investing in complex technological infrastructure and employing competent personnel will accrue huge costs to the organisation, therefore financial readiness is an important factor (62). This finding merges with our qualitative finding where lack financial buy-in from medical aid societies' executives hindered the scaling up of managed care tools implementation.

4.2.2.3 Influence of environmental factors on adoption of managed care tools

Medical aid societies operate within an environmental context which gives them opportunities and constraints to the adoption of managed care tools. The agreement proportion analysis shows that competitive necessity was the most agreed upon factor that influenced the adoption of managed care tools. Evidence of the importance of competitive necessity comes from the study by Kuan and Chau. These authors show that the experience of intense competition was an important determinant of innovation adoption (85). The availability of a legal framework that governs medical aid societies in Zimbabwe was the second most agreed upon factor influencing managed care tools adoption. However, this quantitative finding may seem to differ from those of the qualitative finding which highlighted that the health industry was poorly regulated. A study by Shmueli et al (31) demonstrates how the legal environment can be prohibitive to the implementation of some managed care tools. This study highlighted that in Israel the legal environment and the regulation of market competition regarded selective preferred provider networks as anticompetitive and discriminatory (31).

Our study reported that healthcare providers resisted the use of managed care tools by medical aid societies. This is supported by the finding that most medical aid societies (37.0%) agreed to

healthcare provider resistance to use of managed care tools as a barrier to adoption of managed care. This finding is consistent to reports of backlashes by healthcare providers to the adoption of managed care tools which has been reported in some countries, as providers place a large value in therapeutic freedom and confidentiality (31). Sekhri (57) also suggests that the backlash by healthcare providers emanates from increased administrative burden which require management and financial skills that are required to carry out managed care processes.

4.2.3 Strategies to increase the adoption of managed care tools

Our study suggests that engagement of medical aid members and healthcare providers would reduce resistance to managed care tools because it enables medical aid societies to reassure them of the benefits of implementing managed care tools as well as enabling medical aid societies to better understand and address the criticisms. According to Jeffery (86), it is a necessity for organizations to engage stakeholders so as to give them an opportunity to put forward input into the development of decisions that affect them. Evidence of stakeholder acceptance of innovative solutions relying on stakeholder engagement comes from the study by Safi et al. (87). This author showed that, involving all stakeholders groups appropriately in the development of the change interventions will reduce resistance to its implementation (87).

One of our study interview respondents suggested that research and development of managed care practices in Zimbabwe's private health insurance and healthcare environmental context will help in making the managed care policies and technologies context specific and acceptable. This is an important strategy because as we have noted in literature managed care plans have evolved from the first time they were implemented because managed care organisations will be addressing the different challenges that would have arisen from the use of the managed care tools (17).

4.2.4 Strategies to enhance the effectiveness of managed care tools in healthcare expenditure containment

To enhance the effectiveness of managed care tools in healthcare expenditure containment, our participants suggested integration of medical aid societies into healthcare services. Our study found that most medical aid societies had integrated pharmacies and clinics into their operations, while rehabilitation services had the least integration. The integration of medical aid societies

into healthcare services was viewed as a healthcare cost containment competitive necessity. The literature reveals controversy concerning the pros and cons of private health insurance investing in healthcare services. Critics of the vertical integration strategy argue that when a funder also becomes a healthcare provider the conflict of interest would affect the quality of care that medical aid members would receive (88). In contrast, proponents of the vertical integration strategy in our study claim that this strategy can bridge healthcare service gaps that are in Zimbabwe as well as protect the medical aid member funds from the poorly regulated healthcare providers services fees. Additionally, healthcare coordination and integration strategies were pointed out as strategies that can reduce healthcare resources wastage that arise from fragmented healthcare provision. An interactive series by Stange (89) highlighted similar healthcare resource wastage problems that arise from a fragmented healthcare system. Healthcare services integration would enhance data integration and some studies have indicated that data integration in the healthcare sector would reduce the cost of healthcare expenditure. This can be achieved because it would allow information sharing and communication between the healthcare service providers and reduce wastage that arises from duplication of healthcare service from different healthcare providers (90,91).

Our participants also suggested the use of data analytics to enhance predictive modelling that supports the implementation of better healthcare provider reimbursement models. Our study revealed that only 42.9% of medical aid societies are utilising capitation and only 28.6 % were using discounted fee-for-service as healthcare provider reimbursement models. Provider payment models like fee-for-service's efficiency in healthcare cost containment has been quired (31), and the use of value-based reimbursement models has been documented in literature to have cost saving benefits (28,31,57).

4.3 Study limitations and strengths

There are some limitations of this study. The population of the medical aid societies in Zimbabwe is small and 25% did not participate, posing limitations to statistical analysis, however, a finite population correction was used in in analyses to improve power.

The objectives of this study were descriptive, so we did not measure association of the investigated factors to the adoption of managed care tools. Further research will be required to

properly explain the significance of the factors we investigated to the adoption of managed care tools.

This study has some strengths that make the findings valid and useful. Firstly, this was a primary study therefore the data that was collected was relevant to the stated objectives r.

Our study used a mixed method approach which provided additional insights as our quantitative findings were further and better explained by the qualitative findings.

Finally, most of qualitative interviews were conducted with the medical aid societies managed care head of department, therefore they provided valuable and valid insights based on their extensive professional experience. This also offers an additional advantage that our study's recommendations will be accepted and implemented.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

In conclusion, our study shows that medical aid societies in Zimbabwe are adopting managed care tools into their operations. Our study further supports the integration of managed care departments into the medical aid society organisations as an addition to the repertoire of how managed care systems can be implemented. Medical aid societies in Zimbabwe perceive managed care tools to have healthcare cost saving benefits, and this is the most agreed upon perceived usefulness factor that influenced the adoption of managed care tools. Additionally, providing managed care information systems and competent personnel is the most agreed upon organisation factor that also influenced the adoption of managed care tools. Finally, regarding the environmental factors, competitive necessity is the most dominant factor that prompted the adoption of managed care tools. Our findings underscore the complexity of the health insurance and healthcare environment and provide clear indications of areas of intervention (for example the legal and regulatory environment) required to increase the adoption of managed care tools.

5.2 Recommendations

There are important implications of the findings reported in this study and these include:

5.2.1 Recommendations for improvement

1. It is recommended that to increase managed care adoption, medical aid societies should provide engagement and continuous education programmes to medical aid members and healthcare providers to create awareness about managed care practices and give them an opportunity to put forward input into the development of decisions that affect them.
2. Healthcare service integration would enhance data integration, and data integration would present applications which enhance data analytics to allow for predictive modelling that supports the comprehensive implementation of managed care tools like value-based reimbursement models.

5.2.2 Recommendations for further studies

1. This preliminary descriptive study demonstrates the need for a more analytical study. We have shown the managed care tools that have been predominantly adopted by the medical

aid societies and the factors that the medical aid societies perceive to have influenced their use of managed care tools, but research is also needed on the relative significance of the different determinants of managed care tool adoption.

2. There are no studies that have evaluated the impact of managed care tool adoption on the quality of healthcare in Zimbabwe, therefore in the absence of such evidence medical aid societies should caution against simplistic assumptions about the cost effectiveness of managed care tools. Therefore, research on the impact of managed care tools on the quality of healthcare is clearly needed.
3. Exploratory studies of healthcare providers and insurance members perceptions of managed care in Zimbabwe also need to be conducted.

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APPENDICES

Appendix A: Self-administered questionnaire

Page 1

Adoption of managed care by medical aid societies in Zimbabwe

Section A: Medical aid societies key operating characteristics

1	Number of years medical aid scheme has been in operation.	_____
2	Type of scheme	☐ Open scheme ☐ Restricted scheme ☐ Other type of scheme _____
3	Number of packages offered as at 31 December 2022.	_____
4	Number of medical aid members as at 31 December 2022.	_____
5	Number of female members as at 31 December 2022.	_____
6	Number of male members as at 31 December 2022.	_____
7	Percentage of members aged 60 years and above as at 31 December 2022.	_____

8. Has your medical aid scheme financially invested into the medical services below?

	Yes	No
Hospitals	☐	☐
Clinics	☐	☐
Rehabilitation services	☐	☐
Laboratory services	☐	☐
Dental services	☐	☐
Imaging services	☐	☐
Optometry	☐	☐
Pharmacy	☐	☐
Medical emergency transport	☐	☐

Section B: Managed care tools implemented by medical aid schemes.

- 9 Does your medical aid scheme use managed care tools? ☐ Yes
☐ No
☐ Not sure
- 10 Who is providing your managed care services for your organisation at present? ☐ In-house managed care department
☐ Out-source to another managed care organisation

Definitions of terms

Capitation is a health provider payment method whereby a fixed amount of money per patient per unit time is paid in advance for delivery of health care services.

Discounted fee-for-service is a health provider payment method whereby a health provider agrees to supply services on a fee-for-services basis, but the fees are discounted by a percentage from the health provider's usual charges.

Preferred provider network is the selective contracting of competent health care providers who will be given the responsibility of providing health care services for a health funder.

Gatekeeping is the concept where primary health care providers control access of insured patients to specialists and other expensive medical resources.

Preauthorisation is the process where a health care provider establishes eligibility of care and obtains approval from the patient's health funder before health services are delivered for the service to qualify for payment.

Disease management is a system of coordinated health care interventions and communications for defined patient populations with chronic conditions where self-care efforts can be implemented.

Formulary is the recommended list of pharmaceutical and appropriate medicines dosages which are cost-effective for patient care.

- 11 Which of the following managed care tools have been implemented in your medical aid scheme?
- ☐ Capitation
 - ☐ Discounted Fee for service
 - ☐ Preferred provider network
 - ☐ Gatekeeping
 - ☐ Preauthorisation
 - ☐ Disease management
 - ☐ Formulary
 - ☐ Other managed care tools _____
- (Choose all that have been implemented in your medical aid society)

Section C: Factors influencing adoption of managed care tools by medical aid schemes.**Perceived usefulness**

- 12 Managed care tools are applied to medical aid scheme members using a:
- ☐ Voluntary basis
 - ☐ Package basis
 - ☐ Type of medical service required by medical aid member
 - ☐ Cost of medical services accessed by medical aid member
 - ☐ Other ways of applying managed care tools _____
- (choose all that apply)

Perceived usefulness

Please rate the following statements according to your experience at your medical aid scheme:

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

3 In our medical aid scheme, managed care ☐

tools are useful in decreasing the beneficiaries'

overall healthcare costs.

4 Managed care tools are useful in

improving the health status of our medical aid

schemes' members.

5 Use of managed care tools by

health care providers improves the quality of their

healthcare services in Zimbabwe.

6 In our organisation, managed care is

associated with adverse selection; where healthy

people choose managed care health insurance plans, and less

healthy people choose less restrictive plans.

7 I find managed care tools easy to use.

Organisational factors

Please rate the following statements according to your experience at your medical aid scheme:

Strongly disagree Disagree Neutral Agree Strongly agree

3 Our medical aid scheme provides managed care information systems for our staff.

4 Our medical aid scheme provides managed

care information systems for healthcare providers

that use managed care tools.

5 Our medical aid scheme provides managed

care information systems to our medical aid scheme

members.

6 Our medical aid scheme creates

awareness of managed care tools to our medical aid

scheme members.

7 Our medical aid scheme creates awareness of

managed care to health care providers.

8 Our medical aid scheme has

competent personnel that run the managed

care department.

3 Our medical aid scheme has funds to invest in the adoption of managed care.

Environmental factors

Please rate the following statements according to your experience at your medical aid scheme:

Strongly disagree Disagree Neutral Agree Strongly agree

4 Most medical aid schemes in Zimbabwe have adopted managed care tools.

5 The legal framework that governs medical aid schemes in Zimbabwe supports the adoption of managed care tools.

6 A limited number of healthcare providers in Zimbabwe are willing to join health insurance preferred provider networks.

7 Health care providers resistance to the use of managed care tools is a barrier to the adoption of managed care by our medical aid scheme.

8 Health insurance members resistance to the use of managed care tools is a barrier to the adoption of managed care by our medical aid scheme.

Appendix B: Interview guide

Introduction key components	I want to thank you for taking the time to meet with me today. My name is Silence Tendayi Gukushu, and I would like to have a conversation with you about your understanding or perceptions of the role of managed care in reducing medical aid societies healthcare expenditure in Zimbabwe.
Questions	Can you tell me about the use of managed care tools within your MAS? – Probe: ▪ Implementation of tools over time ▪ Main motivations for managed care: decreased expenditure, more evidence-based care etc. What has been your experience (effects on waste, abuse and cheating by members and providers) working with managed care tools in your organisation? – Probe: ▪ Achieved stated objectives? Decreased expenditure/costs, improved practice ▪ How does your use managed care tools affect: ▪ Healthcare resource usage by your members? ▪ Your medical aid funds? ▪ How does your use of managed care tools influence the services provided by healthcare providers to your members? <i>{effect on unnecessary healthcare services provided to your members}</i> ▪ How does the use of managed care tools influence your members' attitude towards self-care or preventative effort in

	maintaining their optimum health? ▪ Experience with different tools. Which worked, which didn't? Why? ▪ What challenges or limitations have your organisation experienced with implementing the tools that you use? ▪ What has been important in ensuring success? How would you describe the impact of managed care tools on the quality of healthcare? – Probe: ▪ <i>Some literature says that managed care tools interfere with the autonomy of health care providers, and this results in lower patient treatment options that the healthcare provider can use. How would you respond to those claims?</i> ▪ <i>Some literature says that managed care tools hinder the members' access to healthcare services. How would you respond to those claims?</i> ▪ How are these possible problems mitigated? What improvements or changes could be made to enhance the effectiveness of managed care in reducing healthcare expenditure?
Closing key components	Is there anything more you would like to add? I will be analysing the information that you and others gave me and submitting my draft research report to the University of Witwatersrand on the 31 December 2023. I will be happy to send you a copy to review once the university has approved the final report.

	Thank you for your time.
--	--------------------------

Appendix C: Ethics clearance: Wits HREC Ref No; M220665 & MRCZ/B2387



MRCZ/B/2387

APPROVAL

15 September 2022

Silence Tendayi Gukushu
302 Sandton
Mt Hampden
Zvimba

RE:- Adoption of Managed Care by Medical Aid Societies in Zimbabwe

Thank you for the application for review of research activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review: -

- Completed MRCZ 101 new application form
- Full Protocol
- English Informed Consent Forms
- Data collection tools

• **APPROVAL NUMBER** : MRCZ/B/2387

This number should be used on all correspondence, consent forms and documents as appropriate.

• **TYPE OF MEETING** : EXPEDITED

• **APPROVAL DATE** : 15 September 2022

• **EXPIRATION DATE** : 14 September 2023

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ offices should be submitted three months before the expiration date for continuing review.

• **SERIOUS ADVERSE EVENT REPORTING:** All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.

• **MODIFICATIONS:** Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).

• **TERMINATION OF STUDY:** On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.

• **QUESTIONS:** Please contact the MRCZ on Telephone No. (0242)791193, 0864407377203 or by e-mail on mrcz@mrcz.org.zw

Other

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.
- In addition to this approval, all clinical trials involving drugs, devices and biologics (including other studies focusing on registered drugs) require approval of Medicines Control Authority of Zimbabwe (MCAZ) before commencement

Yours Faithfully

.....
MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE



Telephone: 08644073772/791193
E-mail: mrcz@mrcz.org.zw
Website: <http://www.mrcz.org.zw>



Medical Research Council of Zimbabwe
20 Cambridge Road
Avondale
Harare
Zimbabwe

APPROVAL

MRCZ/B/2387

07 September 2023

Silence Tendayi Gukushu
302 Sandton
Mt Hampden
Zvimba

RE:- Adoption of Managed Care by Medical Aid Societies in Zimbabwe

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- **TYPE OF MEETING** : EXPEDITED
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Yours Faithfully

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE





R49 Ms ST Gukushu

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
CLEARANCE CERTIFICATE NO. M220665

NAME:
(Principal Investigator)

Ms ST Gukushu

DEPARTMENT:

School of Public Health
Medical School
University

PROJECT TITLE:

*Adoption of managed care by medical aid societies in
Zimbabwe*

DATE CONSIDERED:

2022/06/24

DECISION:

Approved unconditionally

CONDITIONS:

NOTE:

If contact information regarding student study participants is required,
please contact the Registrar's office - <Nicoleen.Potgieter@wits.ac.za>

SUPERVISOR:

Dr D Blaauw

APPROVED BY:


Dr CB Penny, Chairperson, HREC (Medical)

DATE OF APPROVAL:

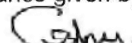
2022/08/26

This Clearance Certificate is valid for 5 years from the date of approval. An extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Research Office secretariat on the 3rd floor, Phillip Tobias Building, Parktown, University of the Witwatersrand, Johannesburg.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated from the research protocol as approved, I/we undertake to submit details to the Committee. **I agree to submit a yearly progress report.** When a funder requires annual re-certification, the application date will be one year after the date when the study was initially reviewed. In this case, the study was initially reviewed in **June** and therefore reports and re-certification will be due in the month of June each year. Unreported changes to the study may invalidate the clearance given by the HREC (Medical).


Signature of Principal Investigator

2022/08/31
Date

Appendix D: Plagiarism declaration



PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I **SILENCE TENDAYI GUKUSHU** (Student number: **1945884**) am a student registered for the degree of MPH – HEALTH ECONOMICS in the academic year 2020.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.
- I have included as an appendix a report from "Turnitin" (or other approved plagiarism detection) software indicating the level of plagiarism in my research document.

Signature: S.T. Gukushu

Date: 05 August 2024