

Factors Affecting Medication Adherence Between Health Workers and Non health Worker of National Obstetric Fistula Centre, Ningi, Bauchi State.

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ABSTRACT

Background: The study was motivated by the need to understand the factors impacting medication adherence among both healthcare workers and non-healthcare workers. It sought to address problems of non-adherence to medication regimes which can negatively affect health outcomes by focusing on behavioural, occupational and regimen related obstacles. The objective of the study was to determine whether healthcare professionals exhibit better adherence than non-health workers and to identify the factors that affect adherence behaviour in both groups.

Methods: The study was conducted at the National Obstetric Fistula Centre, Ningi, Bauchi State, Nigeria, using a cross-sectional analytic technique. Participants consisting of both health workers and non-health workers were both surveyed through structured questionnaires and the Morisky Morisky Medication Adherence Scale (MMAS-8).

Results: There were strong negative correlations between adherence and issues such as forgetfulness, and perceived annoyance. Both health workers and non-health workers experienced declines in adherence as the complexity and number of prescriptions increased. Health workers did not consistently show better adherence despite their medical expertise, and non-health workers improved adherence despite side effects.

Conclusion: Employment in the health sector does not significantly impact overall medication adherence. Targeted interventions, such as simple treatment regimens and medication reminders are needed to address behavioural barriers like forgetfulness, and complex regimens, especially for non-health workers. The research highlighted the importance of tailored strategies to improve adherence across all professions for better health outcomes

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INTRODUCTION

The effectiveness of treatment outcomes is greatly influenced by medical adherence, which is the degree to which a patient's behaviour such as taking medicine, following a diet, or making lifestyle changes corresponds with the agreed-upon recommendations from a healthcare practitioner. Treatment failures, hospital readmissions, and mortality are could result from non-adherence, which is a major problem worldwide. About half of all patients do not take

their prescriptions as directed, particularly those with long-term health conditions, which is a major problem according to the World Health Organisation (Sabaté, 2003).

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In order to better manage chronic illnesses, save healthcare costs, and improve patient outcomes, it

is crucial to understand the variables that impact adherence (Brown & Bussell, 2011).

Socioeconomic status, cultural beliefs, the intricacy of the recommended regimen, adverse effects, and patients' views of their disease and treatment are some of the variables that impact medical adherence. There are many factors that influence patients' adherence habits, but two of the most important are their career and health literacy level. Specifically, when it comes to following medical advice, there is a marked difference between health professionals and the general public. Professionals in the medical field have a reputation for improved treatment adherence due to their wealth of information and access to resources. In theory, they should be more likely to follow treatment plans since they are health-literate and have a better grasp of the possible repercussions of non-adherence (Stirratt & Curtis, 2017).

A higher level of adherence is anticipated from health personnel because of their expertise with medical processes; however, research shows that this is not always the case. According to Lugo et al. (2020) health professionals, regardless of their credentials, often display a lack of adherence in their own practices. Factors like job stress, busyness, and a false feeling of security could cause people to put their health last because they are too busy concentrating on their demanding jobs. Constantly putting the needs of others above their own, healthcare professionals may suffer from "healer's fatigue," which may cause them to neglect their own health and not comply to prescribed treatments (Lugo et al., 2020).

Dissimilarly, non-health professionals may encounter more immediate impediments to compliance. Wroth and Pathman listed a lack of health literacy as one of these obstacles, along with financial restraints, a lack of knowledge about the consequences of non-adherence, and restricted access to healthcare services (Wroth & Pathman, 2006). Patients who are not medical professionals may not get the full benefit of their therapies if they do not finish all of their recommended prescriptions. Furthermore, individuals without a healthcare experience may find the intricacy of medication regimens intimidating, which might impact their adherence.

There has to be tailored treatments since health professionals and non-health workers have such different levels of adherence. It is critical to address the unique causes of health neglect among health professionals, including stress and time restrictions. Adherence among non-health professionals may be greatly improved if

healthcare education was more widely available and medication regimes were simplified. The purpose of this study is to compare and contrast the two groups in terms of medical adherence in order to better understand their specific difficulties and possible solutions for increasing adherence rates.

MATERIALS AND METHODS

Study Design

Health care providers and non-health care providers at Nigeria's National Obstetric Fistula Centre were the subjects of this cross-sectional research that aimed to identify the variables impacting medication adherence. The researchers opted for a cross-sectional design so they could compare the two groups' adherence behaviours at a particular moment in time. Structured questionnaires and verified adherence scores were used to gather data throughout the month-long trial that took place in August 2024.

Study Population

Adult patients at the National Obstetric Fistula Centre served as the research population. This included both healthcare professionals (doctors, nurses, and others) and non-healthcare persons (patients or those who accompanied patients). All participants had to be 21 or older and have been on a medicine prescription for a minimum of one month before the research started. The research only included individuals who gave their written informed permission.

Inclusion and Exclusion Criteria

Participants were included in the study if they were:

- 21 years or older,
- Currently taking at least one prescribed medication,
- Able to communicate in English or Hausa, and
- Willing to provide informed consent.

Exclusion criteria included participants not on prescribed medications, individuals with cognitive impairments that could affect their ability to answer questions, and those who refused to provide consent.

Sample Size Determination

The sample size was calculated using the formula for cross-sectional studies:

$$n = \frac{Z^2 P(1-P)}{d^2}$$

Where:

- n is the sample size.
- Z is the Z statistic for a 95% confidence level (1.96).

- P is the estimated prevalence of medication adherence (39.5%, from a previous study in Nigeria by Akintunde et al. (2015).
- d is the margin of error set at 5%.

Substituting the values into the formula:

$$n = \frac{1.96^2 \times 0.395 \times (1 - 0.395)}{0.05^2} = 368.16$$

Adding 10% for non-response or incomplete data, the final sample size was adjusted to 218 participants. This sample was split evenly between hospital workers and non-hospital workers.

Sampling Technique

A random sampling technique was employed to select participants.

Data Collection Tools

Data were collected using a structured questionnaire and the 8-item Morisky Medication Adherence Scale (MMAS-8). The questionnaire was divided into two sections:

1. **Sociodemographic Characteristics:** Questions covered participants' age, gender, education level, income, marital status, ethnicity, religion, and occupation (health or non-health worker).
2. **Medication and Adherence Information:** This section focused on the type of illness, number of medications prescribed, experienced side effects, and adherence behaviours. The MMAS-8 was utilized to assess adherence, with scores ranging from 0 to 8, where higher scores indicate better adherence (Morisky et al., 2008). Respondents scoring 8 were classified as high adherers, those scoring 6-7 as medium adherers, and those with scores below 6 as low adherers.

Statistical Analysis

Both descriptive and inferential statistics were used for the data that was loaded into the statistical program (SPSS version 27, IBM Corp.). The frequencies and percentages were used to summarise the sociodemographic characteristics and the degrees of adherence. A correlation between profession (health worker vs. non-health worker) and adherence levels was examined using the chi-square test. Furthermore, logistic regression and chi-square tests were used to investigate the associations between medication adherence and sociodemographic variables such as gender, age, and level of education. Statistical significance was determined by a p-value less than 0.05.

RESULTS

Important patterns that may influence strategies for enhancing medical adherence are shown by the

research of adherence levels across different demographic characteristics. Participants in the age ranges of 21–30 and 31–40 had the worst rates of non-adherence, with a large percentage of this group not taking their medication as directed. It seems that younger people may be putting less emphasis on their health, either because of lifestyle demands or because they perceive less danger. On the other side, significantly improved adherence is shown in the 41–50 age range, with a bigger proportion demonstrating medium adherence levels. This might be a sign that individuals are becoming more conscious of health risks as they get older.

When looking at adherence by gender, it's clear that most people aren't really committed, although men do have a little larger percentage of medium adherence than women do. This indicates that both sexes are equally bad at sticking to prescribed medication schedules, but that men may be somewhat more diligent about their treatments than women. There has to be a focused effort to remove the obstacles that men and women have while trying to adhere to treatment plans, because the low incidence of high adherence is a problem for both sexes.

An unexpected outcome is produced by investigating the correlation between income and adherence. The premise that financial resources must promote health outcomes is challenged by the fact that participants with greater incomes (above 100,000 Naira) demonstrate the lowest levels of adherence. People with higher incomes may still encounter obstacles to following medical advice, even when they have more access to healthcare services. This might be due to issues relating to their lifestyle or their jobs. On the other hand, adherence behaviours are better among people earning less than 100,000 Naira, particularly in the bottom groups. This shows that adherence is not directly related to socioeconomic level, and that other variables, including as health literacy and availability of time for self-care, may have a greater impact.

Lastly, it seems that adherence is significantly affected by marital status. Results show that married participants are less likely to adhere than single or divorced persons. One possible explanation is that married people have a harder time putting their health first because of all the conflicting demands of family life. However, there is a more even range of adherence levels among single individuals, which may indicate that improved adherence is possible with fewer personal obligations. Although only a tiny percentage of people who have gone through a

divorce really stick to their treatment plans, the fact that they do so suggests that this demographic may benefit from targeted interventions to help them adopt healthier habits.

A comparison of health care providers and non-health care providers reveals that both groups have comparable difficulties in maintaining regular drug regimens due to forgetfulness and perceived discomfort, the two variables impacting adherence. When it comes to forgetfulness, the numbers show that about the same percentage of people in both categories say they've forgotten to take their medication. Curiously, compared to health professionals, non-workers had a little better memory for their medicine. It seems that health professionals, despite the assumption that they would be more conscientious about taking their prescription as prescribed, are just as likely to forget as everyone else. Their forgetfulness is a

problem that affects adherence in many kinds of vocations, whether it's because their jobs are so busy or because they put the health of their patients above their own.

Both groups believe that following their treatment programs is inconvenient, but non-health workers are somewhat more so. This may be the result of a lack of training in medical procedures or the difficulty non-health professionals have in incorporating more complicated regimens into their everyday lives. Contrarily, health personnel continue to face significant discomfort, even when they are well-versed in treatment techniques. This might be attributed to the time limits and employment demands that they face. Having said that, their noticeably reduced claims of discomfort suggest that they may have honed their time management or coping abilities.

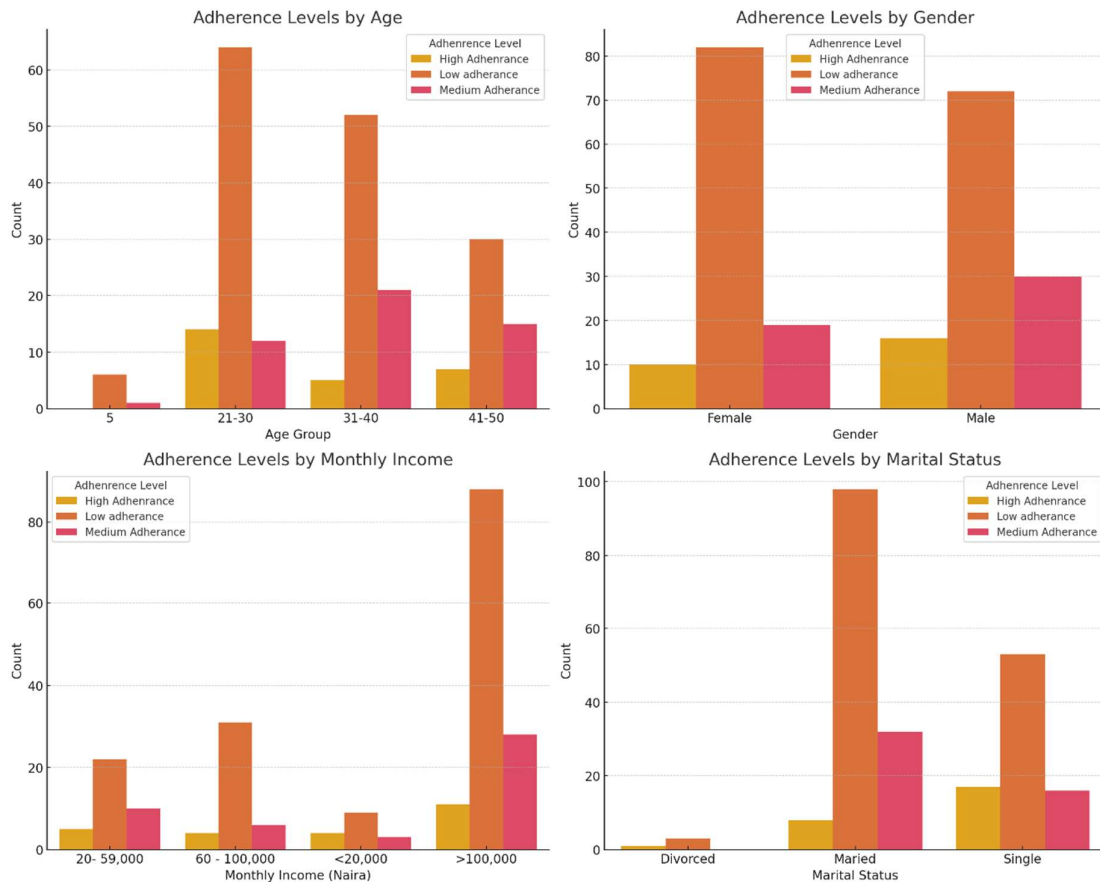


Figure 1 Sociodemographic Factors and Adherence

A strong occupational effect on medication adherence is shown by the graph that compares adherence levels between health professionals and non-health workers. Low adherence is common in both categories, however health professionals

marginally outperform non-health workers in terms of medium adherence. Notably, both groups have very low rates of adherence, with non-health workers having a little higher rate.

Health care providers may not always be more likely to follow their doctors' orders than the general public, even if they have more training and easier access to medical treatment options. Their occupations may make it difficult for them to continuously follow their own health advice, what with the long hours and high stress. Contrarily, medium adherence is comparable or somewhat better among non-health professionals, despite the fact that they may encounter obstacles including reduced health literacy. This shows that improved adherence is not always a function of professional position, even if occupational status does affect access to healthcare information.

The variables impacting adherence may be better understood with the use of the Chi-Square test findings. A p-value of 0.726 indicates that profession does not substantially impact adherence behaviours when comparing adherence levels between health workers and non-health workers. This data implies that patients are just as likely to follow their treatment plans regardless of whether they are health care providers or not.

Contrarily, the correlation between gender and adherence levels is only slightly higher than the typically accepted significance level of 0.05 ($p = 0.057$). This finding raises the possibility of a correlation between gender and adherence; however, the connection is small and not statistically significant at this time, therefore more research with larger samples is needed to draw firmer conclusions.

On the other hand, the findings on perceived annoyance and forgetting are rather remarkable. A very tiny p-value ($2.37e-16$) for forgetfulness confirms a very significant connection between medication adherence levels and forgetting to take medicine. This suggests that poor adherence is more common among those who have a habit of forgetting to take their prescription. Perceived annoyance also had a very modest p-value ($2.47e-14$), indicating a substantial connection between treatment plan trouble and non-adherence. The results show that people are far less likely to take their medicine as prescribed when they find the treatment procedure difficult or annoying.

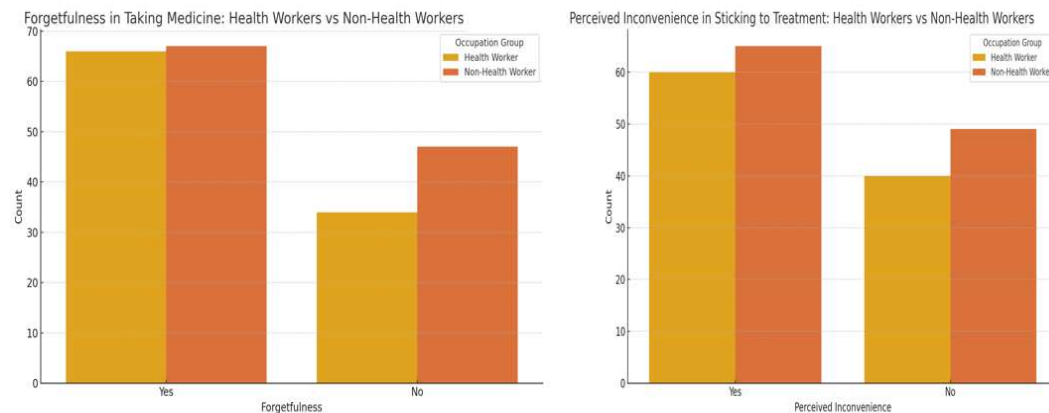


Figure 2 Forgetfulness and Perceived Inconvenience as Factors affecting Adherence

Important insights into the impact of complicated drug regimens and side effects on health professionals and non-health workers are revealed by the examination of behavioural aspects influencing adherence. The adherence ratings of both groups reach their highest point when individuals are taking five prescriptions, suggesting that the number of prescribed medications significantly affects adherence. Professional expertise and familiarity with medical practices may explain why health professionals exhibit better adherence ratings compared to non-health workers across a range of drug complexity levels. However, adherence drastically decreases for both groups as the number of prescriptions grows to seven, with non-health professionals seeing a

somewhat more dramatic loss. This indicates that even with medical competence, complicated regimens may have detrimental consequences beyond a certain point, and that health workers may be better at managing complexity in the outset, but that both groups have trouble sticking to the regimens as they get more onerous.

Regardless matter whether they encounter side effects or not, health professionals maintain rather good adherence levels, according to the heatmap. Given this consistency, it's reasonable to assume that healthcare providers are better able to deal with side effects, using their medical expertise to alleviate symptoms without allowing them compromise patient adherence. In contrast, the reaction to side effects is more variable among

non-health professionals. Curiously, non-health workers report better adherence after experiencing side effects, but worse adherence overall. This shows that non-health professionals may be more likely to stick to their treatment plans

after experiencing side effects, which might increase their awareness of the significance of their therapy and decrease the likelihood of poor outcomes associated with non-adherence

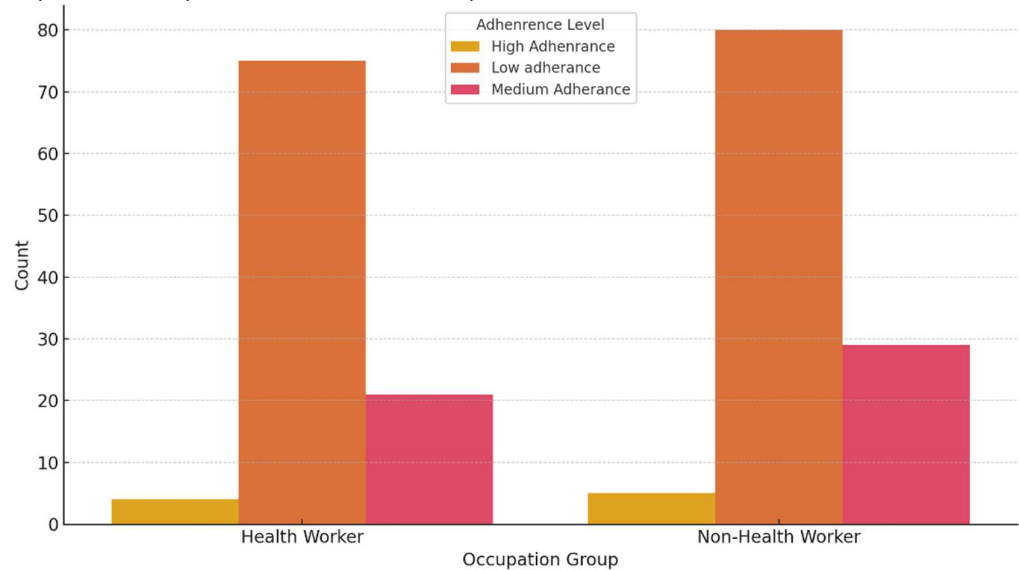


Figure 3 Occupational Factor Affecting Adherence

Table 1 Chi Square Analysis

Test	p-value
Occupation vs Adherence	0.7264
Gender vs Adherence	0.0569
Forgetfulness vs Adherence	2.367×10^{-16}
Perceived Inconvenience vs Adherence	2.467×10^{-14}

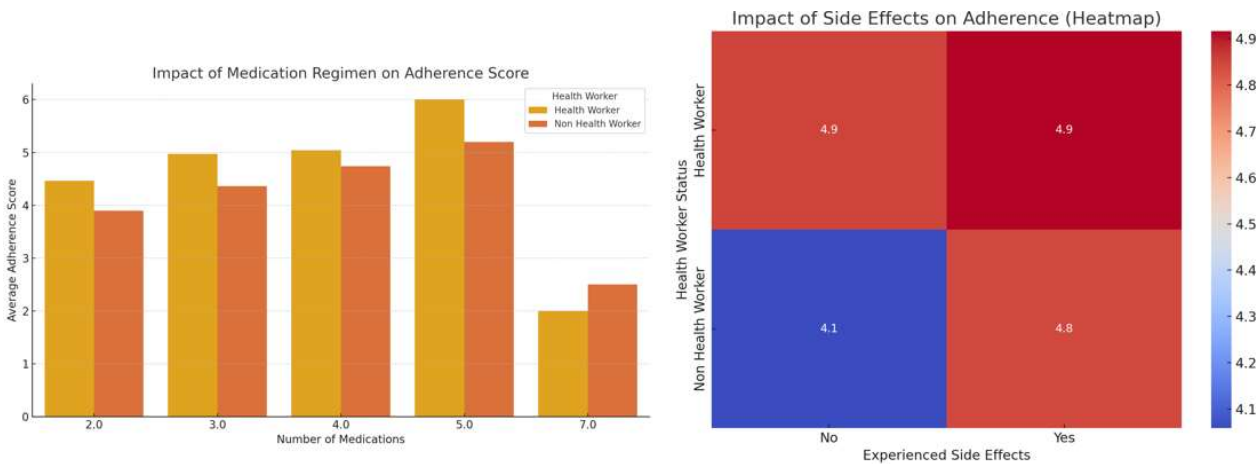


Figure 4 Medication Regimen and Side Effect as Factors Affecting Adherence

DISCUSSION

This study's results shed light on the elements influencing medication adherence, particularly the role of sociodemographic, vocational, and

behavioural variables in connection to the complexity of drug regimens and side effects. According to the results, there is a complicated interaction between adherence levels and

variables including forgetfulness, perceived discomfort, and side effects. These results clarify the distinct difficulties encountered by health professionals and non-health workers, which are in line with and contradictory to earlier research.

Sociodemographic Factors and Adherence

Fascinating patterns emerge from the examination of compliance levels according to age, gender, amount of education, income, and marital status. Adherence was lower among those aged 21–30 and 31–40, but it was greater among those aged 41–50, indicating that age was a major determinant. Consistent with previous research, such as that of Brown & Bussell, (2011) Our results show that adherence is lower among younger persons owing to lifestyle variables and a decreased perceived risk of disease. Overall, adherence was poor across the board, although the gender analysis did demonstrate that men are somewhat more adherent than women. The results of Vlasnik et al. (2005) on the other hand, indicated that adherence rates are greater among women, especially when it comes to managing chronic diseases. Our findings on the effects of income and education on adherence levels are in contrast with those of McHorney et al. (2009) reported that greater income and education were associated with better adherence because of improved health literacy and access to healthcare services (McHorney et al., 2009). Since socioeconomic variables may fluctuate greatly between people and locations, it's possible that these variations are context dependent.

Occupational Factors

Both the health workers and the non-health workers had generally low levels of adherence, indicating that profession did not substantially affect adherence. No improvement in adherence was seen among health professionals, even though they had more access to healthcare information and services. Health care providers often put their own health on the back burner owing to job pressures, stress, and an inflated feeling of self-confidence, which is in line with the findings of Lugo et al. (2020) Since there doesn't seem to be much of an effect from employment on adherence, it's possible that other behavioural elements, including forgetfulness and inconvenience, are more important.

Aspects of Behaviour: Ignorance and Perceived Difficulty

There was a very significant correlation between forgetfulness and decreased adherence levels, suggesting that forgetfulness is a vital role in adherence. Previous research, including that of Horne et al. (2013) showed that forgetfulness is a

major factor in non-adherence, and our findings corroborate that. Similar levels of amnesia were observed by both health professionals and non-health workers, suggesting that medical expertise may not always avoid this problem. Patients who reported feeling burdened by their treatment regimen were much less likely to stick to it, suggesting a robust relationship between perceived discomfort and adherence (Horne et al., 2013). This agrees with what Sabaté (2003) found, which is that patients, especially those dealing with complicated treatment regimens, are quite likely to fail to adhere due to the perceived hardship of doing so (Sabaté, 2003). Targeted treatments, such medication reminders or simpler treatment plans, are needed to enhance adherence since forgetfulness and annoyance are universal difficulties that affect both health professionals and non-health workers.

Medication Regimen Complexity

Researchers also looked at how complicated prescription regimens affected adherence and found that the more medicines a person took, particularly beyond five, the worse their adherence ratings were. At first, health professionals were better able to handle more complicated regimens than non-health workers. However, as the number of prescriptions grew, adherence declined significantly for both groups. It is worth noting that patients often have challenges when it comes to managing several drugs, whether it's due to confusion, side effects, or the sheer amount of work involved in keeping track of them all. This aligns with the findings of Ingersoll & Cohen (2008), who discovered that medication complexity is a strong indicator of non-adherence. As the number of prescriptions rises, even health personnel, who are more knowledgeable with medical processes, can't escape the difficulty of managing complicated regimens, according to the research.

Side Effects and Adherence

A fascinating difference between health professionals and non-health workers was highlighted by the influence of side effects on adherence. Because they were able to control their symptoms and keep to their treatment plan, health care professionals showed great adherence even when they had adverse effects according to DiMatteo et al. (2010) In contrast, non-health professionals exhibited better adherence when side effects were present, which may indicate that non-workers were more conscious of the significance of taking their prescriptions as recommended due to the existence of adverse effects. Contrary to what

other research has shown, such as that of DiMatteo et al. (2010), we find that adverse effects are usually linked to decreased adherence. On the other hand, the fact that non-health professionals in this research reacted differently indicates that side effects could actually be a reason for people to stick to their treatment plans, maybe because they are afraid their health would become worse.

CONCLUSION

Behavioural and regimen-related obstacles make drug adherence difficult for both health professionals and those who do not work in the healthcare industry, as this research shows. Health professionals showed the same lack of adherence as non-health workers, particularly when it came to handling complicated prescription regimens, despite being in close proximity to medical information. Important hurdles that considerably impacted adherence levels for both groups were perceived annoyance and forgetfulness. When faced with adverse effects, non-health workers exhibited better adherence, but health workers remained constant in their adherence no matter what. These results highlight the need of treatments that address behavioural aspects, such as reminders for forgetfulness and assistance for complicated regimens, since occupation alone does not predict adherence. Improving adherence and, by extension, health outcomes, requires removing these obstacles, particularly for those who are not health care professionals.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

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