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Occupational Determinants of Medication Adherence among Virtual Assistants with Type 2 Diabetes Mellitus: A Cross-Sectional Analysis

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ABSTRACT

This study examined the occupational factors influencing medication adherence among virtual assistants with Type 2 Diabetes Mellitus (T2DM). Specifically, it described occupational characteristics, determined the level of medication-taking behaviors, examined the association between occupational factors and medication adherence, and identified significant predictors of medication adherence.

A quantitative cross-sectional design using a web-based survey through Google Forms was employed. Of the 210 respondents initially recruited through purposive and snowball sampling, 149 met the inclusion criteria and were included in the final analysis. Descriptive statistics, Pearson correlation, and multiple linear regression were utilized.

Findings revealed that respondents commonly experienced mental stress (M = 4.20, SD = 0.88) and demanding workload (M = 4.04, SD = 0.96). Medication nonadherence behaviors were moderate overall (M = 3.28, SD = 1.17). Significant negative associations were observed between occupational factors and medication adherence, particularly delaying medication because of work ($r = -.566$, $p < .001$), schedule interference ($r = -.552$, $p < .001$), and forgetting medication due to work demands ($r = -.541$, $p < .001$). Regression analysis identified work schedule interference ($\beta = -.318$, $p = .014$), delaying medication because of work ($\beta = -.276$, $p = .029$), and mental stress ($\beta = .241$, $p = .036$) as significant predictors.

The study concludes that occupational factors significantly influence medication adherence and highlights the need for workplace-based interventions and health-supportive policies for remote workers.

Keywords: medication adherence, virtual assistants, type 2 diabetes mellitus, occupational factors, remote work

INTRODUCTION

Type 2 Diabetes Mellitus (T2DM) remains one of the most significant global public health concerns due to its increasing prevalence and long-term complications. In the Philippines, diabetes continues to pose a major health burden, affecting an estimated 4.3 million Filipinos and ranking among the leading causes of morbidity and mortality (IDF, 2021). Prolonged sitting has been shown to impair glucose metabolism and increase the risk of T2DM (Loh et al., 2020; Nam et al., 2016). With the rapid expansion of digital technology and remote work, sedentary occupations have become increasingly common, particularly

among virtual assistants who often experience prolonged screen exposure, irregular schedules, and extended working hours. These work-related conditions may contribute not only to the development and progression of T2DM, but also to challenges in maintaining healthy behaviors and treatment adherence (Dempsey et al., 2018; Lemes et al., 2019).

Despite the growing burden of T2DM and the importance of long-term management, achieving optimal glycemic control remains a challenge, largely due to issues related to medication adherence. Medication adherence is essential in preventing complications and ensuring effective disease management; however, nonadherence continues to be a widespread problem among individuals with T2DM. Adherence rates vary significantly, with many patients demonstrating suboptimal adherence to prescribed therapies (Lee et al., 2022; Burkhart & Sabaté, 2003). Medication adherence is influenced by multiple factors, including patient-related, therapy-related, condition-related, health system, and socioeconomic determinants.

One rapidly growing occupational sector in the Philippines is the virtual assistant (VA) and online freelancing industry. The Department of Information and Communications Technology has recognized the continued expansion of the digital workforce and digital freelancing industries and has increased employment opportunities for Filipino virtual assistants, supported by the country's growing digital economy and remote work culture. Recent studies showed that approximately 1.5 million Filipino digital platform workers are engaged in online freelance services, including virtual assistance and related remote work activities (Soriano, 2021). Virtual assistants commonly experience prolonged screen exposure, sedentary behavior, cross-time-zone schedules, irregular working hours, and high workload demands associated with remote work environments.

While these determinants have been studied in general populations, there remains a lack of focused research examining how occupational factors operate within the context of virtual assistants, a rapidly growing workforce characterized by remote work arrangements, flexible schedules, prolonged sedentary behavior, and cross-time-zone demands. Remote work allows flexibility in work structure and often involves non-standard schedules and global coordination (Allen et al., 2015; International Labour Organization, 2021). However, work-from-home arrangements are also associated with increased sedentary behavior and prolonged sitting time, which are linked to adverse metabolic outcomes (Owen et al., 2010; Lemes et al., 2019). Additionally, irregular work schedules and shift work may disrupt circadian rhythms and daily routines, potentially affecting health behaviors and treatment adherence (Ganesan et al., 2019). In the Philippines, the continued expansion of the digital workforce further highlights the relevance of studying virtual assistants within this occupational context (Department of Information and Communications Technology [DICT], 2022). However, there is limited evidence specifically investigating medication adherence among virtual assistants diagnosed with T2DM, particularly using an online, web-based cross-sectional approach.

Thus, this study aims to examine the occupational determinants of medication adherence among virtual assistants with Type 2 Diabetes Mellitus using a web-based cross-sectional design. Specifically, it seeks to describe the occupational characteristics of virtual assistants, determine the level of medication adherence, examine the relationship between occupational factors and adherence, and identify which work-related factors significantly predict medication adherence.

Guided by the World Health Organization Multidimensional Adherence Model, the study hypothesizes that occupational factors significantly predict medication adherence among virtual assistants with Type 2 Diabetes Mellitus.

This study is guided by the following research questions: (a) What are the occupational characteristics of virtual assistants with Type 2 Diabetes Mellitus? (b) What is the level of medication adherence among this population? (c) Is there a significant association between occupational factors and medication adherence? (d) Which occupational factors serve as significant predictors of medication adherence?

The findings of this study may contribute to multiple sectors. For virtual assistants diagnosed with T2DM, the study may provide insights into how work-related conditions influence adherence challenges and promote better disease management practices. For the academe, it will add to the body of knowledge in occupational health and chronic disease management within the digital workforce. For pharmacists and healthcare providers, the findings may support the development of tailored counseling strategies, telehealth interventions, and patient-centered care approaches that consider the work demands of remote workers. Lastly, future researchers may use this study as a reference for further investigations focusing on occupational determinants of medication adherence or related outcomes in similar populations.

This study is anchored on the World Health Organization Multidimensional Adherence Model, which explains that medication adherence is influenced by interacting factors related to the patient, condition, therapy, health system, and socioeconomic environment. Within this framework, occupational conditions are considered part of the broader socioeconomic and environmental context that may shape an individual's ability to follow prescribed treatment regimens.

In the context of virtual assistants with Type 2 Diabetes Mellitus, work-related factors such as irregular work schedules, long working hours, demanding workload, work–medication interference, and work-related stress may create barriers to consistent medication-taking behavior. These occupational demands can disrupt daily routines, delay medication intake, increase forgetfulness, and contribute to psychological burden, all of which may affect adherence.

The independent variables in this study are occupational factors, specifically work schedule, working hours, workload, work–medication interference, and work-related stress. The dependent variable is medication adherence, measured through a self-report adherence scale. Age and duration of diabetes are included as control variables because they may also influence adherence behavior and are therefore statistically controlled in the analysis.

The framework proposes a direct relationship between occupational factors and medication adherence. It assumes that greater occupational burden is associated with poorer adherence among virtual assistants with Type 2 Diabetes Mellitus. This relationship is examined through correlation and multiple regression analysis to determine both the strength of association and the significant predictors of medication adherence

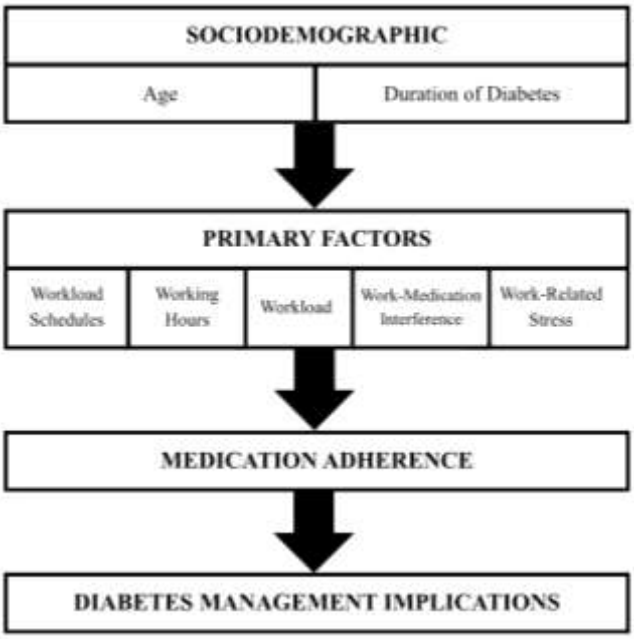

Figure 1. Conceptual framework adapted from the WHO Multidimensional Adherence Model

METHODS

The study employed a quantitative, cross-sectional research design to examine the influence of occupational factors on medication adherence among virtual assistants with Type 2 Diabetes Mellitus. This design was appropriate as it allowed the assessment of relationships between variables at a single point in time without manipulating any study conditions. The cross-sectional approach enabled the researchers to describe occupational characteristics, determine adherence levels, and evaluate associations between variables within the target population.

Data was collected through a web-based survey using Google Forms, which facilitated efficient data gathering from virtual assistants across different regions of the Philippines. This approach was particularly suitable given the remote nature of the target population and allowed access to a geographically dispersed group of respondents.

A total of 210 virtual assistants (VAs) initially responded to the survey and were recruited using purposive and snowball sampling techniques. Following data screening, only 149 respondents were retained for analysis after applying the eligibility criteria. Participants were considered eligible if they met the following inclusion criteria: (1) currently working as a virtual assistant or remote worker, (2) aged 18 years and above, (3) diagnosed with Type 2 Diabetes Mellitus, and (4) currently taking at least one medication for diabetes management. Responses from individuals who answered “No” to having Type 2 Diabetes Mellitus, those not taking any diabetes medication, or those who disagreed in giving consent were excluded during the data cleaning process. As a result, a total of 61 respondents were removed, yielding a final sample size of 149 eligible participants for statistical analysis.

The required sample size was determined using the rule of thumb for multiple linear regression proposed by Green (1991), which recommends a minimum of $N \geq 104 + m$ for testing individual predictors, where m represents the number of independent variables. In this study, six predictors were included in the model, namely work schedule, working hours, work interference, work-related stress, age, and duration of diabetes. Based on this, the minimum required sample size was 110 participants.

To account for potential incomplete responses and nonresponse bias associated with web-based surveys, the researchers aimed to recruit at least 130 to 150 participants to ensure sufficient statistical power and robustness of the findings. This approach is consistent with recommendations in multivariate research, which emphasize adjusting sample size estimates to accommodate potential data loss and improve the reliability of statistical analyses (Hair et al., 2019).

Data were collected using a researcher-developed questionnaire consisting of four sections. The first section included screening and eligibility questions. The second section collected basic demographic and clinical information, including age and duration of diabetes, which were treated as control variables. The third section focused on occupational factors, including work schedule, working hours, work interference with medication-taking, and perceived work-related stress. These variables were measured using categorical and Likert-scale items. The fourth section assessed medication adherence using the Medication Adherence Report Scale (MARS-5), a validated self-report instrument consisting of five items rated on a 5-point Likert scale ranging from "always" to "never." Higher scores reflected greater medication nonadherence behaviors.

The instrument underwent content validation by a clinical expert in diabetes management to ensure the relevance and clarity of the questionnaire items. Reliability testing yielded a Cronbach alpha of 0.92, indicating excellent internal consistency. Prior to dissemination, pilot testing involving 20 virtual assistants was conducted to assess the clarity, comprehensibility, and preliminary reliability of the survey instrument.

To further evaluate construct validity, exploratory factor analysis (EFA) was conducted on the questionnaire items. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a value of 0.893, indicating excellent sampling adequacy, while Bartlett's Test of Sphericity was statistically significant ($p < 0.001$), confirming that the data were suitable for factor analysis. The analysis identified a two-factor structure representing occupational work-related demands and medication nonadherence behaviors, supporting the construct validity of the instrument.

In assessing potential common method bias resulting from the use of self-reported measures, Harman's single-factor test was conducted using exploratory factor analysis. The findings suggested that common method variance was not substantial enough to significantly threaten the interpretation of the study results.

After establishing the adequacy of the instrument, the questionnaire was distributed electronically to qualified participants through Google Forms. Data collection was conducted over a period of one (1) to three (3) weeks, depending on participant response time. The findings of the study were based solely on the responses collected from eligible participants.

The study protocol was reviewed and approved prior to data collection. The study adhered to the ethical principles outlined in the Declaration of Helsinki and institutional guidelines governing research involving human participants.

Participants were informed about the purpose of the study, the voluntary nature of participation, confidentiality of responses, and their right to withdraw at any time without penalty. Informed consent was obtained prior to participation. No identifiable personal information was collected, and all data were securely stored and made accessible only to the researchers and research adviser. The study involved no foreseeable risks or compensation, and all procedures complied with institutional data privacy policies.

Descriptive and inferential statistical methods were utilized to analyze the data. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the occupational characteristics of respondents and their level of medication adherence.

To examine the relationship between occupational factors and medication adherence, the Pearson correlation coefficient (r) was applied. This analysis determined the strength and direction of the association between variables.

Furthermore, multiple linear regression analysis was conducted to identify which occupational factors significantly predict medication adherence while controlling for age and duration of diabetes. This approach is consistent with the conceptual framework, which assumes a direct relationship between occupational factors and medication adherence.

All statistical analyses were performed using Statistical Package for the Social Sciences (SPSS), with a significance level set at $p < 0.05$ for all inferential tests.

RESULTS

This section presents the findings of the study organized according to the researcher's questions, focusing on the occupational characteristics of the respondents, the level of medication adherence, the association between occupational factors and medication adherence, and the occupational predictors of adherence among virtual assistants with Type 2 Diabetes Mellitus.

Table 1. Occupational Characteristics of Virtual Assistants with T2DM

Occupational Factor	M	SD
Irregular work schedule	3.80	1.19
Long working hours	3.83	1.09
Demanding workload	4.04	0.96
Schedule interferes with medication timing	3.67	1.20
Delay medication because of work	3.81	1.17
Forget medication due to work demands	3.94	1.10
Work is mentally stressful	4.20	0.88
Overall	**3.90**	**1.08**

What are the occupational characteristics of virtual assistants with Type 2 Diabetes Mellitus? As shown in Table 1, the overall mean score for occupational characteristics was 3.90 (SD = 1.08), indicating that respondents generally agreed that their work involves demands that may affect medication-taking behavior. Among the indicators, mental work stress obtained the highest mean score (M = 4.20, SD = 0.88), interpreted as "strongly agree," followed by demanding workload (M = 4.04, SD = 0.96) and forgetting medication due to work demands (M = 3.94, SD = 1.10). These findings suggest that virtual assistants commonly experience irregular schedules, long working hours, and high levels of work-related stress.

Table 2. Medication Nonadherence Scores among Virtual Assistants with T2DM

Medication Adherence Item	M	SD
I forget to take my medication	2.65	1.20
I change the dose of my medication	3.64	1.15
I stop taking my medication for a while	3.12	1.10
I decide to skip taking my medication	3.17	1.26

I take less medication than prescribed	3.83	1.16
Overall	**3.28**	**1.17**

Note: Higher scores indicate greater medication nonadherence behaviors.

What is the level of medication adherence among virtual assistants with Type 2 Diabetes Mellitus? As shown in Table 2, the overall mean score for medication nonadherence was 3.28 (SD = 1.17), indicating a moderate level of nonadherence. Among the items, "I take less medication than prescribed" obtained the highest mean score (M = 3.83, SD = 1.16), interpreted as High, while "I forget to take my medication" obtained the lowest mean score (M = 2.65, SD = 1.20), interpreted as Moderate. This indicates that while respondents generally attempt to follow prescribed regimens, lapses such as forgetting, skipping, or delaying medication still occur.

Table 3. Association Between Occupational Factors and Medication Adherence

Occupational Factor	r	p
Irregular schedule	-0.312	<0.001
Long work hours	-0.221	0.007
Demanding workload	-0.248	0.002
Schedule interferes with medication time	-0.552	<0.001
Delay medication because of work	-0.566	<0.001
Forget medication due to work demands	-0.541	<0.001
Work is mentally stressful	-0.173	0.035

Note: Negative values indicate lower medication adherence with increasing occupational burden.

Is there a significant association between occupational factors and medication adherence? As shown in Table 3, all occupational factors demonstrated statistically significant associations with medication adherence ($p < .05$). The strongest negative correlations were observed for delaying medication because of work ($r = -0.566$), work schedule interference with medication timing ($r = -0.552$), and forgetting medication due to work demands ($r = -0.541$), all of which showed moderate negative effect sizes ($p < .001$). These findings suggest that increased occupational disruptions and work-related demands are associated with poorer medication adherence among virtual assistants with Type 2 Diabetes Mellitus.

Table 4. Multiple Regression Analysis Predicting Medication Adherence

Predictor	B	β	t	p	95% CI
The schedule interferes with medication time	-0.205	-.318	-2.481	0.014	[-0.367, -0.043]
Delay medication because of work	-0.188	-.276	-2.209	0.029	[-0.355, -0.021]
Work is mentally stressful	0.214	.241	2.118	0.036	[0.016, 0.412]

$R^2 = .425$, Adjusted $R^2 = .383$, $F = 10.03$, $p < .001$

"What occupational factors serve as significant predictors of medication adherence?" As shown in Table 4, the multiple regression analysis identified the occupational factors that significantly predict medication adherence among virtual assistants with Type 2 Diabetes Mellitus. The overall regression model was

statistically significant ($F = 10.03$, $p < 0.001$), indicating that occupational variables collectively explain variations in medication adherence. The model yielded an R^2 value of 0.425 and an adjusted R^2 of 0.383, suggesting that approximately 42.5% of the variance in medication adherence is explained by occupational factors.

Among the predictors, work schedule interference with medication timing emerged as a significant negative predictor ($B = -0.205$, $p = 0.014$), indicating that greater disruption of medication routines is associated with lower adherence. Similarly, delaying medication because of work was identified as a significant negative predictor ($B = -0.188$, $p = 0.029$). Mental stress was also found to be a significant predictor ($B = 0.214$, $p = 0.036$). Work schedule interference demonstrated the strongest standardized effect. These findings confirm the direct influence of occupational demands on medication adherence, consistent with the study's conceptual framework.

The significant association observed for mental stress may reflect possible adaptive coping behaviors among some respondents or differences in the perception and reporting of stress-related experiences.

Overall, the results provide empirical evidence of the direct relationship between occupational factors and medication adherence among virtual assistants with Type 2 Diabetes Mellitus.

DISCUSSION

Research Question 1: Occupational Characteristics

The findings revealed that respondents experience demanding occupational conditions, including irregular schedules, long working hours, high workload, and significant mental stress. Mental stress emerged as the most prominent factor, indicating that respondents perceive their work as cognitively demanding.

These conditions suggest that occupational demands may disrupt daily routines and interfere with medication-taking practices, particularly in sedentary and remote work environments characterized by prolonged sitting and irregular work patterns (Owen et al., 2010; Lemes et al., 2019). Work-related factors such as schedule interference, delaying medication due to work, and forgetting medication highlight the direct impact of occupational structure on adherence behavior. Overall, these findings indicate that the work environment of virtual assistants presents significant barriers to consistent medication adherence, particularly due to time-related disruptions and psychological burden (Oakman et al., 2020; Hallman et al., 2021; Lemes et al., 2019).

These findings support the World Health Organization Multidimensional Adherence Model, which emphasizes that environmental and socioeconomic factors influence medication adherence. In this study, occupational demands represent a key environmental determinant that directly affects adherence behavior, particularly in the context of remote work arrangements.

Research Question 2: Level of Medication Adherence

In relation to this, the study found that respondents demonstrated a moderate level of medication nonadherence. This indicates that while participants generally attempt to follow prescribed treatment regimens, adherence remains inconsistent, with lapses such as forgetting, delaying, or skipping medication still occurring.

This implies that adherence behaviors are present but not fully optimized, potentially due to competing priorities and daily work demands. The need to manage occupational responsibilities alongside chronic disease treatment may create challenges in maintaining consistent medication-taking routines.

This finding is consistent with recent literature reporting suboptimal adherence among individuals with Type 2 Diabetes Mellitus. Khunti et al. (2019) emphasized that medication adherence remains a persistent

challenge and is strongly associated with health outcomes. Similarly, Capoccia et al. (2018) identified forgetfulness, treatment burden, and lifestyle demands as common barriers to adherence, while Iglay et al. (2021) highlighted the role of competing responsibilities in influencing medication-taking behavior.

Research Question 3: Association Between Occupational Factors and Medication Adherence

The results demonstrated that occupational factors were significantly associated with medication adherence, with higher levels of occupational demands corresponding to lower levels of adherence. In particular, delaying medication due to work, work schedule interference with medication timing, and forgetting medication due to work demands showed the strongest negative correlations.

This indicates that occupational responsibilities may directly interfere with the ability of individuals to maintain consistent medication routines. When work demands take priority, essential health behaviors such as medication intake may be delayed, skipped, or forgotten.

These findings align with recent evidence indicating that work-related stress, irregular schedules, and competing demands can disrupt routines and negatively influence adherence behaviors. Kardas et al. (2020) identified lifestyle constraints and competing priorities as key determinants of nonadherence, while Gast and Mathes (2019) emphasized that routine disruption and psychosocial stress are critical barriers to adherence in chronic disease management.

Furthermore, these results are consistent with the World Health Organization's multidimensional adherence framework, which recognizes that adherence is shaped by the interaction of behavioral, environmental, and socioeconomic factors. In this study, occupational demands represent a significant environmental factor influencing adherence behavior.

Research Question 4: Predictors of Medication Adherence

Lastly, the study revealed that work schedule interference with medication timing and mental stress are significant predictors of medication adherence among the participants. This reflects that occupational factors involving disruption of time and psychological burden play an important role in explaining adherence behaviors beyond other work-related variables included in the model. Specifically, when work schedules interfere with the ability to take medication on time, adherence is more likely to decline, highlighting the importance of routine and consistency in chronic disease treatment. Likewise, mental stress may influence motivation, concentration, and decision-making, which can affect a patient's ability to maintain medication routines. Interestingly, the finding that mental stress emerged as a significant predictor may appear counterintuitive, as stress is typically associated with poorer adherence behaviors. This may be influenced by the way stress is perceived or reported among respondents, or it may reflect differences in coping mechanisms, wherein some individuals under stress become more conscious of their health behaviors. Furthermore, the results showed that occupational variables collectively explained a substantial proportion of the variance in medication adherence, suggesting that workplace conditions are meaningful contributors to treatment behavior in this population. These findings are aligned with the multidimensional adherence framework of the World Health Organization, which recognizes environmental, psychosocial, and behavioral influences as key contributors to adherence outcomes. Previous studies have also shown that stress, competing demands, and routine disruption are associated with poorer adherence in chronic disease management (Burkhart & Sabaté, 2003; Gast & Mathes, 2020). The findings suggest that interventions focused on schedule management, workload adjustment, stress reduction, and supportive workplace practices may be particularly beneficial for virtual assistants living with T2DM.

The findings of this study support the World Health Organization Multidimensional Adherence Model by demonstrating that medication adherence among virtual assistants with Type 2 Diabetes Mellitus is influenced by environmental and socioeconomic factors, particularly occupational demands. The results reinforce that medication adherence is influenced by multiple determinants, particularly occupational demands. In doing so, the study contributes to the growing literature on chronic disease management within emerging digital work environments and provides an occupational context that may help refine existing adherence frameworks for remote workers.

On the other hand, the findings of this study may also provide practical guidance for real-world interventions aimed at improving medication adherence among virtual assistants with Type 2 Diabetes Mellitus. Government bodies such as the Department of Health (DOH), Department of Labor and Employment (DOLE), and PhilHealth may use the results as a basis for policies that expand telehealth services, strengthen workplace wellness standards, and improve access to maintenance medications and routine consultations for remote workers. Employers, freelance agencies, and platform administrators may apply the findings by adopting flexible schedules, manageable workloads, regular break periods, and health promotion programs suited to virtual work arrangements. Healthcare providers, particularly pharmacists, may use the evidence to develop targeted counseling strategies, medication reminder systems, and follow-up services that address the unique needs of virtual assistants, thereby improving adherence and long-term health outcomes.

The researchers identified several limitations in the study. First, the study relied on self-reported responses regarding medication adherence, health behaviors, and work-related factors, which may be subject to response bias. Participants may have provided socially desirable responses, such as overstating adherence to prescribed medications or minimizing unhealthy behaviors, which could affect the validity of the data. Second, the use of a voluntary web-based survey may have introduced selection bias, as individuals with internet access, greater engagement in online platforms, or stronger interest in their health may have been more likely to participate. This may have also contributed to nonresponse bias, wherein eligible individuals who chose not to participate may differ in important ways from those who completed the survey.

Third, the cross-sectional nature of the study limits the ability to establish causal relationships between the identified determinants and medication adherence, since data were collected at a single point in time. In addition, the diagnosis of Type 2 Diabetes Mellitus and medication use were based solely on participant declarations and were not independently verified through medical records or healthcare professionals.

Furthermore, the findings may have limited generalizability because the study utilized purposive and snowball sampling techniques, which are forms of non-probability sampling. Participants were recruited primarily through online platforms and professional networks, making it possible that individuals who were more health-conscious, technologically engaged, or more willing to disclose their condition were overrepresented in the sample. Consequently, the findings may not fully represent all virtual assistants with Type 2 Diabetes Mellitus in the Philippines or other working populations.

This study extends the application of the World Health Organization Multidimensional Adherence Model by situating medication adherence within the context of remote work. It highlights that occupational structure, particularly in digital labor environments, serves as a critical environmental determinant of adherence behavior. This contributes to the literature by demonstrating that adherence is not solely patient-driven but is significantly shaped by work-related conditions.

CONCLUSION

The study examined the occupational determinants of medication adherence among virtual assistants with Type 2 Diabetes Mellitus. The findings indicate that occupational factors, particularly schedule interference, delayed medication due to work, and mental stress, significantly influence adherence behavior.

Respondents demonstrated moderate medication nonadherence behaviors, suggesting that while individuals attempt to follow prescribed regimens, work-related demands interfere with consistent medication-taking practices.

The results also demonstrated a significant association between occupational factors and medication adherence. Moreover, regression analysis identified work schedule interference with medication timing, delaying medication due to work, and mental stress as significant predictors of medication adherence. This indicates that both time-related disruptions and psychological burden play a critical role in shaping adherence behavior among the respondents.

The study concludes that occupational factors significantly influence medication adherence among virtual assistants with Type 2 Diabetes Mellitus. These findings highlight the need to integrate occupational health considerations into chronic disease management frameworks, particularly within remote and digital work environments.

The study contributes to the growing body of knowledge on medication adherence and occupational health by focusing on virtual assistants with Type 2 Diabetes Mellitus, a population that remains underrepresented in current literature. It provides evidence on how sociodemographic, clinical, and occupational factors influence adherence to prescribed medications within the context of remote and sedentary work. The findings may also serve as a basis for developing targeted interventions, workplace wellness strategies, and patient-centered healthcare approaches tailored to the needs of virtual assistants. Overall, this study positions occupational structure as a critical but underexplored determinant of chronic disease management in digital labor economies.

RECOMMENDATIONS

For policymakers, particularly the Department of Health (DOH), Department of Labor and Employment (DOLE), and PhilHealth, strengthen policies and programs that support medication adherence and chronic disease management among remote workers with Type 2 Diabetes Mellitus. These initiatives may include expanding telehealth services, improving access to maintenance medications and consultations, and promoting workplace wellness programs suited to remote work arrangements.

For companies and agencies employing virtual assistants, as well as freelance platforms and administrative leaders, strengthen organizational policies that promote the health and well-being of workers with Type 2 Diabetes Mellitus. Institutions may implement wellness programs that encourage regular movement breaks, healthy lifestyle practices, stress management, and work-life balance within remote work arrangements. They may also consider flexible scheduling, reasonable workload distribution, and supportive leave policies that allow employees to attend medical consultations and manage their condition effectively.

For healthcare professionals, particularly pharmacists, physicians, nurses, and diabetes educators, strengthen patient-centered practices that promote medication adherence among virtual assistants with Type 2 Diabetes Mellitus. Pharmacists may provide individualized counseling on proper medication use, adherence strategies, side effect management, and the importance of maintaining consistent treatment

routines despite varying work schedules. Healthcare providers may also integrate teleconsultations, digital reminders, and regular follow-up monitoring to better support patients in remote work settings.

For future researchers, further studies involving larger and more diverse samples are recommended to improve the generalizability of findings on medication adherence among virtual assistants with Type 2 Diabetes Mellitus. Future research may also utilize longitudinal or mixed-methods designs, examine additional variables such as mental health and healthcare access, and explore intervention-based approaches including telehealth services, reminder systems, and workplace wellness programs to further improve medication adherence and health outcomes.

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