



Article

Pharmacists' Satisfaction with Work and Working Conditions in New Zealand—An Updated Survey and a Comparison to Canada

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Abstract: Background: As roles have evolved over time, changes in workplace environments have created higher patient expectations creating stressful conditions for pharmacists. Aim: To evaluate pharmacists' perceptions of their working conditions, work dissatisfaction, and psychological distress; determine their predictors in New Zealand (NZ); and compare results with Canadian studies and historic NZ data. Methods: A cross-sectional online survey was distributed to registered pharmacists in NZ. The survey included demographics, work satisfaction, psychological distress, and perceptions of their working conditions (six statements with agreement rated on a 5-point Likert scale). Comparisons were made with surveys from Canada and NZ. Chi-square, t-tests, and non-parametric statistics were used to make comparisons. Results: The response rate was 24.7% (694/2815) with 73.1% practicing in a community pharmacy (45.8% independent, 27.3% chains). Pharmacists disagreed on having adequate time for breaks and tasks, while the majority contemplated leaving the profession and/or not repeating their careers again if given the choice. Working longer hours and processing more prescriptions per day were predictive factors for poorer job satisfaction. More NZ pharmacists perceived their work environment to be conducive to safe and effective primary care (57% vs. 47%, p < 0.001) and reported that they had enough staff (45% vs. 32%, p = 0.002) as compared to Canadian pharmacists. Pharmacists' job satisfaction and psychological distress have not improved compared to the assessment 20 years prior. Conclusions: NZ pharmacists perceive working conditions to be sub-optimal yet had higher satisfaction than their Canadian counterparts. Work dissatisfaction and psychological distress are high and have not improved over the last two decades.

Keywords: working conditions; satisfaction; mental health



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1. Introduction

To accommodate pharmacists' expanding scope of practice and services, changes to workplace environments are required [1,2]. However, in many jurisdictions, these changes have been slow to be implemented producing additional work-related stress [3,4]. Studies around the globe have continued to identify common factors contributing to workplace stress for pharmacists in the past decade [5–24].

In the United Kingdom and the United States, studies have found that increases in prescription volume and workload were positively correlated with an increase in pressure which can result in a lower standard of work and job satisfaction [5–11]. In addition, it also manifests as an increase in dispensing errors due to inadequate break time [12,13], workflow interruption [13,14], increased workload and stress [7,8,10,12–16], and dissatisfaction with the dispensary layout [6,10,12]. Insufficient staffing levels [8,15,16], a recent change in pharmacy ownership [5,17], and public expectations have all exhibited negative effects on pharmacists' perception of work safety as well [13]. As a result, this pressure threatens pharmacists' feelings of competency at work, despite the fact that their skills are being under-utilised due to a mismatch of education, role, and daily tasks [18–20].

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Adapted from the Oregon Board of Pharmacy survey on pharmacists' perception of their working conditions [21], Tsao et al. initially surveyed pharmacists working in British Columbia, Canada in 2013 [22] and then extended the survey to include four other Canadian provinces (Alberta, New Brunswick, Newfoundland, and Prince Edward Island) to further identify aspects that contributed to Canadian pharmacists' perspectives of their working conditions [23]. The results show that the majority were satisfied that their working environment assisted in delivering safe and effective patient care; however, most were dissatisfied by the inadequate break time for lunch, staffing levels, and duration to complete their task at hand. Dissatisfaction towards their working conditions was more prominently found in pharmacists working in chain pharmacies, submerged by high prescription volume, and imposed by clinical service quotas for reimbursable tasks. These elements also contributed to perceived unsafe working conditions that can result in worse patient care.

New Zealand pharmacists share a similar scope of practice with Canadian pharmacists including providing vaccinations, medicines reviews, and treatment of minor ailments; although, the details and procedures for each service are slightly different. In addition, New Zealand pharmacists are remunerated similarly and face similar funding situations as Canadian pharmacists. As such, New Zealand pharmacists might be experiencing similar dissatisfactions as Canadian and US pharmacists. Nationally in New Zealand (NZ), a 2001 study piloted by Dowell et al. assessed the job satisfaction and psychological stress among NZ's general practitioners (GP), physicians, surgeons, and community pharmacists [25]. Of the study participants, 41% of pharmacists exhibited significantly more work distress compared to 20–30% of GPs and surgeons. Pharmacists were also more likely to report that they were likely to seek other employment within the next year. This survey has not been repeated in NZ, and it is unclear if conditions have since improved.

Evaluations of pharmacists' working conditions have been investigated by several countries globally, but not yet in New Zealand. As such, the objectives of this study are as follows:

- 1. To determine the perception of current pharmacists' working conditions in NZ and compare these with those recently found in Canada;
- 2. To depict the work-related and psychological distress of NZ pharmacists and compare with a prior assessment;
- To explore relationships between work conditions and various predictor variables.

2. Method

2.1. Survey Administration/Mechanics

A cross-sectional online survey was created and hosted on the platform Qualtrics[©] and distributed to currently registered pharmacists practicing in NZ via email with a web link. The Pharmacy Council of NZ (the regulatory authority) maintains a pharmacist database where members have previously consented to be contacted to participate in research and surveys. We utilised this resource to contact practicing pharmacists in NZ using their email addresses in the database and invited them to complete the survey anonymously. The survey design was adapted from the Oregon Board of Pharmacy survey [21]. The same survey was adopted by Tsao et al. as well to investigate working conditions for Canadian pharmacists. [22,23] Ethics approval for this study was granted by the University of Otago Human Ethics Committee on December 2020 (D20/418), and all participants provided informed consent.

2.2. Survey Instrument

The survey was comprised of pharmacists' demographics, pharmacy experiences and clinical activities, characteristics of the pharmacy, perceptions of working conditions and work stress, and the General Health Questionnaire-12 (GHQ-12).

To assess perceptions of working conditions, the respondents were provided with 6 statements regarding their working conditions which were adapted from Tsao et al. [22].

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Using a 5-point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree), respondents were asked to rate their agreement with the statements. All 6 statements were framed in such a way that an agreement with them was indicative of satisfaction with working conditions.

Nine statements regarding participants' perceived work stress were provided to participants, who were subsequently asked to rate each statement on a 7-point Likert scale for agreement (1 = strongly disagree and 7 = strongly agree). These statements were adapted from Dowell et al. [25].

The GHQ-12 [26–28] is a validated and reliable instrument. The General Health Questionnaire (GHQ) is an instrument developed by Goldberg and Hillier in 1979 for screening psychological distress among adults working in primary care settings [1,26]. Goldberg et al. proceeded to generate a shorter but equally robust version known as the GHQ-12, which contains 12 items [27]. Respondents rank each statement on a relative scale of feeling "never" to "always" for each item. Following the responses, results are dichotomised to either 0 (none or less than usual) or 1 (more than usual) to evaluate anxiety and depressive symptoms in individuals lacking psychiatric disorders. The total possible score is 12 and a score of 4 and above is considered to be indicative of the possibility of suffering from potential psychiatric morbidity [25–27]. This questionnaire was included to determine the presence of psychiatric impacts on our respondents' jobs and to also allow our data to be comparable to the 2001 study by Dowell et al. [25].

2.3. Data Collection

The survey was launched on 15 March 2021, and data were collected up to 20 May 2021. A follow-up email was sent to participants after one month of initially launching the survey and again after another month as reminders to increase responses. Participants' consent was obtained prior to commencing the survey and the anonymity of participants was guaranteed.

2.4. Data Analyses

We used summary statistics to describe the demographics of respondents and results from the survey questions and the GHQ-12 questionnaires (Appendix A). The Likert scale assessing the working conditions statements was truncated to combine options "strongly agree" with "agree" while "strongly disagree" with "disagree". Hereafter, the options will be referred to as 'agree' and 'disagree' respectively, permitting comparability with results from Tsao et al.'s studies [22,23]. We categorised our respondents into community, hospital, and other pharmacists, and we categorised the self-reported hours of work each week (<20 h; \leq 20 and <40 h; \leq 40 and <60 h; and >60 h), and the number of prescriptions filled per day (\leq 100, and >100). To analyse and compare results from the Likert scales, the non-parametric Mann–Whitney U test with post hoc pairwise comparisons was used to compare medians. T-tests and ANOVA were used to compare the mean scores of the GHQ-9 between our sub-groups. Chi-squared tests were used to determine the statistical significance between the percentage of pharmacists who scored above the cut-off scores of 4 and 8 in the GHQ-12 questionnaire in our study and Dowell et al.'s study from 2001 [25]. A *p*-value < 0.05 was considered statistically significant.

3. Results

3.1. Respondents

Of the 2815 surveys sent out to registered pharmacists in New Zealand, 694 pharmacists responded (response rate of 24.7%); however, only 579 were available for full analysis due to missing data. A detailed illustration of the respondents' demographics is characterised in Table 1. These demographics are very similar to the Canadian respondent pharmacists that were assessed by Tsao et al. who form our comparator sample [22,23].

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Table 1. Respondent demographics.

Characteristics	Number ($n = 579$)	Percentage (%)
Gender		
Female	382	65.9
Male	197	34.1
Qualifications		
Bachelor of Pharmacy (BPharm)	294	50.8
Diploma of Pharmacy	93	16
Postgraduate qualifications (e.g.,	93	10
PGCertPharm, PGCertPharPres, etc.)	138	23.8
Others (e.g., PhD, BSc, PGDip	54	9.4
Management, etc.)	54	9.4
Primary Practice Site		
Community pharmacy (chain or	423	73.1
independent)	423	73.1
In-patient hospital pharmacy	0.4	1.4.4
Others (e.g., academia, primary care,	84 72	14.4
industry, etc.)	12	12.5
Primary Practice Site Location		
Main urban area (≥30,000 people)	362	62.5
Secondary urban area		
(10,000~29,999 people)	122	21.0
Minor urban/rural area (<9999 people)	95	16.5
Practice Role		
Clinical/specialist pharmacist	103	17.8
Pharmacy manager	88	15.2
Pharmacy director/owner	126	21.8
Staff pharmacist	179	30.9
Others (e.g., industry, academia, etc.)	83	14.3
Years as Registered Pharmacist		
≤5	106	18.3
6–15	153	26.4
16–24	92	15.8
≥25	219	37.9

3.2. Personal Pharmacy Experiences and Clinical Activities

The majority (52.0%) of the respondents reported working an average of $8.1-10\,h$ per shift, and 47.7% reported working more than $40\,h$ in a typical week. In terms of filling >100 new prescriptions/day or >100 refills per day, the results were 42.2% and 36.0%, respectively.

3.3. Characteristics of the Pharmacy

A total of 81.5% of the respondents confirmed their primary practicing site offered a private consultation room. In total, 73.8% reported that the average patient wait time was no longer than 20 min. A total of 46.2% reported their site to be spacious while 20.9% felt it was neither spacious nor cramped, and the remaining 26.4% felt that their practice site was cramped.

3.4. Satisfaction with Working Conditions

In general, the majority of the respondents disagreed on having adequate time for breaks/lunches (46%) and were dissatisfied with the amount of time they had to complete their job (51%). However, most agreed that their primary practice site fostered an environment conducive to providing safe and effective primary care (57%) and also had adequate staffing levels, which included pharmacists, technicians, and retail assistant staff members (Table 2).

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Table 2. Responses from NZ pharmacists' assessment of working conditions as compared with Tsao et al.'s 2016 Canadian study results [22].

	Canadian Pl n = 1		NZ Phar <i>n</i> = 5		
	Disagree (%)	agree (%) Agree (%) Disagree (%			
"I have adequate time for break/lunches at my practice site"	48	40	46	40	
"I am satisfied with the amount of time I have to do my job"	45	34	51	31	
"My employer provides a work environment that is conducive to providing safe and effective primary care" ^	28	47	20	57	
"My site has adequate pharmacist staff to provide safe and effective primary care"	36	41	32	46	
"My site has adequate technician staff to provide safe and effective primary care" *	35	32	33	45	
"My site has adequate retail assistant staff to provide safe and effective primary care"	31	45	25	42	

Results are statistically significant with p < 0.001; *Results are statistically significant with p = 0.002 as tested with Chi-square tests. The "neutral ratings were not included, and thus, the agree/disagree proportions do not add to 100%.

When comparing the median Likert scores for "I have adequate time for break/lunches at my practice site", the median score of those who worked 40 h or less compared to those who worked more than 60 h was significantly higher (p = 0.047). Similarly, for the statement "I am satisfied with the amount of time I have to do my job", those who worked less than 40 h or less a week had significantly higher scores (p = 0.004). Similar differences were revealed when analysing daily prescription volume categories. When comparing the median Likert scores of the agreement for "My site has adequate pharmacist staff to provide safe and effective primary care", "My site has adequate technician staff to provide safe and effective primary care", and "My site has adequate retail assistants to provide safe and effective primary care", those with new prescription volumes ≤ 100 had higher median scores (p = 0.004, p = 0.024, and p = 0.028, respectively).

To compare NZ and Canadian pharmacists, data collected from Tsao et al.'s study and ours are placed adjacent to one another in Table 2 [23]. A similar distribution of primary practice roles was found for the two samples. Scores for "My employer provides a work environment that is conducive to providing safe and effective primary care" and "My site has adequate technicians staff to provide safe and effective primary care" were significantly higher in NZ as compared to Canada.

Levels of perceived work stress and job dissatisfaction affecting NZ pharmacists are presented in Table 3. When compared to the 2001 findings, the 2021 survey results show that the level of perceived work stress has mostly remained stable in areas such as contemplating leaving their job because of work stress, the feeling that work stress has affected health, and, if given the choice, they would not choose pharmacy as a career again.

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Table 3. Comparison of community pharmacists' responses to statements about work stress with Dowell et al.'s 2001 study results [25].

	2001 NZ Pharmacists <i>n</i> = 303	2021 NZ Pharmacists n = 423	2021 NZ Pharmacists (Proportion Agree/Strongly Agree)
Contemplated leaving your job due to work stress	4 (2–6)	5 (3–7)	45%
Felt that work stress has affected health	4 (3–5)	5 (3–7)	45%
Felt unable to remain competent at work	3 (2–4)	3 (1–5)	15%
Felt overwhelmed by paper work	6 (5–7)	5 (3–7)	40%
Felt frustrated over bureaucratic interference	7 (6–7)	6 (4–7)	58%
Feel work has interfered significantly with family/social life	5 (4-6)	5 (3–7)	38%
Likelihood of not repeating career choice again	5 (3–6)	6 (4–7)	55%
Government funding for patient care has increased	2 (2–4)	1 (1–3)	3%
Pharmacists should have a greater role in primary care	5 (4–7)	6 (5–7)	71%

Results are shown in median (quartile range) with items scored on a 7-point Likert scale with 1 being strongly disagree and 7 being strongly agree. Additionally, results for the 2021 survey include the proportion that agreed and strongly agreed (scored as 6 and 7 on the Likert scale—these results were not available from the Dowell study). Of note, the proportion of those who disagreed/strongly disagreed with "Felt unable to remain competent at work", and "Government funding for patient care has increased" were 47% and 72%, respectively.

The results of the GHQ-12 scores are displayed in Table 4. From 2001 to 2021, the mean GHQ-12 score for pharmacists in NZ has remained relatively stable (3.21 to 3.50, p=0.13) and the percentage of those scoring four and above has also remained stable (40.7% to 47%, p=0.11). However, those who scored higher than eight decreased from 11.3% to 2% (p<0.001).

Table 4. Comparison of community pharmacists' General Health Questionnaire 12 (GHQ-12) scores with Dowell et al.'s 2001 study results [25].

2001 NZ Pharmacists	2021 NZ Pharmacists
n = 300	n = 389
3.21 (3.20)	3.50 (1.83)
41%	47%
11%	2%
	3.21 (3.20) 41%

4. Discussion

This is the first study to evaluate the working conditions of registered pharmacists in NZ which allows for a comparison with similar work conducted in Canada. It also re-assesses their satisfaction toward their job and the impact of their workload on their well-being and facilitates a comparison with a similar survey conducted 20 years prior. Our study determined that perceived working conditions for New Zealand pharmacists were

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substandard and were similar to those perceived by Canadian pharmacists. We discovered that, although more than half acknowledged their workplace was conducive to delivering safe and effective patient care, numerous pharmacists were troubled by not having sufficient time for their breaks and for their job. A large proportion of pharmacists had considered abandoning their pharmacy career due to the work impact on their health, and most would be unlikely to repeat their career choice again if given the option. Even more were irked by the bureaucratic micromanagement and the incessant amount of administrative paperwork they have to involuntarily wrestle as part of their jobs. We found a high degree of psychological distress in pharmacists that was higher than it was 20 years ago.

Findings in this research generally resonated with those conducted by others internationally. Using the same set of descriptive statements to describe their working environment allowed our results to be compared with results gathered from Tsao et al.'s studies [22,23] and the Oregon Board of Pharmacy Study [21]. In general, our findings were similar to these other similar surveys with a low endorsement for "I have adequate time for break/lunches at my practice site", "I am satisfied with the amount of time I have to do my job", "My site has adequate pharmacist staff to provide safe and effective primary care" and "my site has adequate retail assistants to provide safe and effective primary care". There was significantly more agreement among NZ pharmacists than among Canadian pharmacists for "My employer provides a work environment that is conducive to providing safe and effective primary care" and "My site has adequate technician staff to provide safe and effective primary care". Some of the findings from the Canadian survey associated quotas imposed by employers for paid clinical services with a lower agreement with the working condition statements. In NZ, in general, there are fewer paid services from the government for patient care services based in pharmacies than in Canada, thus making the imposition of quotas on pharmacists less common which may explain some of the differences. With a lower time imposition on pharmacists to provide these services, there may be less reliance on technicians to make the dispensary operations run, thus reflecting the higher satisfaction with the number of technicians in the NZ system. More research is needed to elucidate the reasons behind these differences.

When comparing the survey results from the current survey to the questions that were asked 20 years prior, there was little improvement in pharmacist satisfaction and mental health. Generally speaking, the majority of pharmacists felt work stress has compromised their health, family, and social life. They felt submerged by paperwork and frustrated by bureaucratic interference. Most agreed that government funding to support pharmacists in delivering patient care has increased minimally over the years and that pharmacists should most definitely play a greater role in primary care. With a larger sample size but a heightened psychological distress score, it highlights the concerns recognised and addressed 20 years ago that have not only been sustained but have also regressed for community pharmacists.

4.1. Strengths

By conducting a cross-sectional study design, it allows for the identification of potential public health issues for current New Zealand pharmacists, which is difficult to address using other study designs. Recognition and acknowledgement of the current working conditions for New Zealand pharmacists are important as it serves as a driving force for improvement and progression for this group in the workforce. Raising awareness of the troubles pharmacists face in New Zealand provides a foundation and stepping-stone to plan and implement actions required for addressing areas requiring improvements. This can foster an upgrade in working environments for New Zealand pharmacists leading to improvements in mental and physical distresses and satisfaction in the future.

This study also incorporated a reasonably large sample size. Based on the New Zealand Pharmacy Council Working Demographics 2020 [29], there are a total of 3906 practicing pharmacists in New Zealand. Of the 3906 practicing pharmacists, 2815 have consented to enrol in the database that allowed researchers to invite them as participants for research and

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surveys. Having a relatively large sample size provides an opportunity for more accurate and representative results, which allows findings from this study to be applicable to a greater population.

4.2. Limitations

Despite the strengths, there are also limitations present that should be acknowledged. Firstly, the response rate was modest despite the relatively large sample size, which indicates the presence of a non-response bias. This may be driven by a limited time frame of two months for data collection. However, in NZ [29], 66.6% of practicing pharmacists were females and 79% worked in a community pharmacy which is similar to our sample of 65.9% females and 73.1% community pharmacists. The median age reported for NZ registered pharmacists in 2020 was 37.6 years old while the mean age of our responders was 44.9 years old. As such, our sample is congruent with the pharmacist population, suggesting that the results may be generalisable to the wider population.

Secondly, based upon the results of our initial piloting of the survey, the wording of the survey was updated to more closely reflect terms that were reflective of New Zealand pharmacy practices. Consequently, in the working conditions section, the item "patient care" was replaced with "primary care" which could have led to a slightly different interpretation of these questions. However, we believe the risk of this was low as those pharmacists who piloted the survey suggested the new wording based on the original interpretation.

Additionally, due to the cross-sectional study design, the causality of items (work hours, prescription volume) on job stress and working conditions cannot be determined. Despite evidence that the participants were stressed and dissatisfied, this could potentially be influenced by non-work-related factors. However, comments in the free text section on the reasons for their increasing stress and dissatisfaction levels were about being underpaid, understaffed, and undervalued while simultaneously being overworked. However, we recognised that not all participants commented on the open-ended question; thus, such comments may not be representative of all participants, nor is it generalisable to the national population. Additionally, ideally, there would have been more recently published evaluations of pharmacists' working conditions and work stress than that conducted by Dowell et al. [25] to form a comparison. Unfortunately, these were the most recent data available in New Zealand, highlighting the need for regular evaluations to occur.

Finally, response bias may be present where participants respond to survey questions by attempting to predict the researchers' desired results. Attempts to minimise response bias have been carried out by promising anonymity to all participants; however, subjectivity cannot be eliminated completely. Although conducted during 2021, a period when the COVID-19 pandemic continued to plague the globe, we must view the responses in this context. However, the perceptions of the surveyed pharmacists are likely not entirely due to COVID-19 as the survey was also conducted a year after the pandemic emerged, which suggests adaptations in response to the outbreak have already been well-established. Furthermore, many additional comments left by participants signified that increases in stress levels and unsatisfactory job conditions have been a long-standing issue plaguing New Zealand pharmacists.

5. Conclusions

This study revealed that NZ pharmacists' perception of their current working conditions is suboptimal. Although similar to Canadian pharmacists' perceptions, NZ pharmacists had more agreement with the statements that employers provide environments that are conducive to safe primary care practice and that there was enough technical staff. Pharmacists, especially those who worked longer hours and processed more prescriptions per day, strongly agree with statements of contemplating leaving their job due to stress and the likelihood of not repeating the same career. Psychological distress among pharmacists remains high and remained largely unchanged over the past 20 years. Further evaluations conducted more regularly can monitor working conditions, investigate solutions for

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changes to foster a better workplace environment for pharmacists, and characterise the impact of pharmacists' working conditions on patient-centered care.

Author Contributions: Conceptualization, C.A.M., L.D.L.; methodology, C.A.M., S.J.L.; software, S.J.L.; validation, S.J.L., and C.A.M.; formal analysis, S.J.L., C.A.M.; investigation, S.J.L.; resources, C.A.M.; data curation, S.J.L. writing—original draft preparation, S.J.L. writing—review and editing, C.A.M., L.D.L.; visualization, C.A.M.; supervision, C.A.M.; project administration, C.A.M.; All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Ethics Committee of the University of Otago (D20/148 approved 2 March 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Not available.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Survey Design.

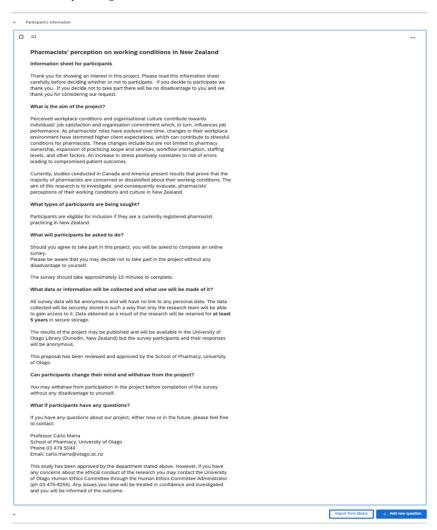


Figure A1. Question 1.

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▼ Participation Consent	
Consent Form I have read and understood the subject information provided in this consent form. I understand that my participation is entirely voluntary and that I may decline to participate in the survey. I have had sufficient time to consider the information provided. I understand that all of the information collected will be kept private and that results will be used to examine working conditions of pharmacists in New Zealand. Please select yes to consent to participate. If you do not wish to participate, please exit the survey. Yes	*
Q3 Did you know about the guideline on "Workplace Pressures in a Pharmacy" generated by the Pharmacy Council in 2012? https://www.pharmacycouncil.org.nz/dnn_uploads/Documents/standardsguidelines/Workplacedocwebsite.pdl ver=2017-02-20-105019-567 Yes No	
•	Import from library + Add new question
Q4 What is your gender? Male Female Other, please specify Prefer not to say	*
Q5 What year were you born?	*
Please indicate your primary practice site: Academic institution/research organisation Community pharmacy - Chain/banner/supermarket Community pharmacy - Independent/individual Industry (e.g. pharmaceutical company, consulting company) In-patient hospital pharmacy Other, please specify	*

Figure A2. Question 2–6.

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	97	*
0	Which District Health Board (DHB) is your primary practice site located?	^
	O Auckland	
	O Bay of Plenty	
	O Canterbury	
	O Capital & Coast	
	O Counties Manukau	
	O Hawkes Bay	
	O Hutt Valley	
	O Lakes	
	O Mid-Central	
	O Nelson-Mariborough	
	O Northland	
	O Tairawhiti	
	○ Taranski	
	O South Canterbury	
	○ Southern	
	○ Walkato	
	○ Wairarapa	
	○ Waitemată	
	○ West Coast	
	○ Whanganui	
	Q8	*
	Is your practice site located in a?	
	O Main urban area (≥ 30,000 people)	
	Secondary urban area (10,000 ~ 29,999 people)	
	○ Minor Urban area (1,000 ~ 9,999 people)	
	○ Rural center (300 ~ 999 people)	
	○ Rural (< 300)	
	C Rulai (Sou)	
	09	*
	Please select your practice role:	
	○ Clinical/specialist Pharmacist	
	O Pharmacy Manager	
	O Pharmacy Director/Owner	
	O Relief/Casual Pharmacist	
	O Staff Pharmacist	
	Other, please specify	
		*
	Q10	*
	In what year did you first become a registered pharmacist?	
		al.
	Q11	*
	Please select the number of years you have been a registered pharmacist:	
	○ ≤ 5 years	
	○ 6-10 years	
	O 11-15 years	
	○ 16-20 years	
	○ 21-25 years	
	O > 25 years	
	Other, please specify	

Figure A3. Questions 7–11.

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	212		*
P	Please select your qualifications:		
	Bachelor of Pharmacy (BPharm)		
	☐ Diploma of Pharmacy		
	Doctor of Philosophy (PhD)		
	Postgraduate Certificate in Clinical Pharmacy (PGCertPharm)		
	Postgraduate Diploma in Clinical Pharmacy (PGDipClinPharm)		
	Postgraduate Master in Clinical Pharmacy (MClinPharm)		
	□ Postgraduate Certificate in Pharmacist Prescribing (PGCertPharPres)		
	Others, please specify		
_	วเ3 Please indicate your certification for any of the follov	wing: (Select more than on if	*
	applicable)	The Contest Hole than of h	
	Community Pharmacy Anti-coagulation Management Service (CPAM)		
	Community Pharmacy And Coagainston Management Service (CPGMS)	uj	
	☐ Emergency Contraception		
	Medicines Therapy Assessment (MTA)		
	Medicine Uses Review (MUR)		
	Prescribing		
	Selected Oral Contraceptives		
	Sildenafil		
	☐ Trimethoprim		
	☐ Vaccination		
	☐ None of the above		
Pers	sonal Pharmacy Experience		
	sonal Pharmacy Experience		
_ q	214	ording to your job	
_ Q			
_ Q	ol4 Please rate the following descriptive statements acco O stars = strongly disagree, 7 stars = strongly agree)		
) Q	ol4 Please rate the following descriptive statements according to the statement of the sta		
_ Q	Please rate the following descriptive statements acco 0 stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health	长女女女女女	
) Q	Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health	****	
⊃ Q P	Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health Felt unable to remain competent at work Felt overwhelmed by paper work	******* ******* *****	
) Q	Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health Felt unable to remain competent at work Felt overwhelmed by paper work Felt frustrated by bureaucratic interference	******** ******* *****	
_ Q	Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health Felt unable to remain competent at work Felt overwhelmed by paper work Felt frustrated by bureaucratic interference Feel work as interfered significantly with family/social life	******** ******* ******* *****	
_ Q	Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health Felt unable to remain competent at work Felt overwhelmed by paper work Felt frustrated by bureaucratic interference Feel work as interfered significantly with familty/social life Likelihood of not repeating career choice again	********** ******** ******* ****** ****	
_ Q	Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health Felt unable to remain competent at work Felt overwhelmed by paper work Felt frustrated by bureaucratic interference Feel work as interfered significantly with familty/social life Likelihood of not repeating career choice again		
Q P ((Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health Felt unable to remain competent at work Felt overwhelmed by paper work Felt frustrated by bureaucratic interference Feel work as interfered significantly with family/social life Likelihood of not repeating career choice again Government funding for patient care for pharmacist has increased		
P (()	Please rate the following descriptive statements according to stars = strongly disagree, 7 stars = strongly agree) Contemplated leaving your job due to work stress Felt that work stress has affected health Felt unable to remain competent at work Felt overwhelmed by paper work Felt frustrated by bureaucratic interference Feel work as interfered significantly with family/social life Likelihood of not repeating career choice again Government funding for patient care for pharmacist has increased Pharmacists should have a greater role in primary care Pharmacists should have a greater role in primary care Approximately what percentage of your day do you so the total should add up to 100)	本本本本本本本本本本本本本本本本本本本本本本本本本本本本本本本本本本本本	
P ((Please rate the following descriptive statements account of the statements account of the statement of the s	Spend doing the following tasks?	
P (()	Please rate the following descriptive statements account of the statements account of the statement of the s	spend doing the following tasks?	
Q P (()	Please rate the following descriptive statements account of the statement	spend doing the following tasks?	

Figure A4. Questions 12–15.

Pharmacy **2023**, *11*, *21* 13 of 19

Have you recently		IQ12)				
Have you recently	Never	Rarely	Sometimes	Always		
Been able to concentrate	0	0	O	O		
on what you are doing? Lost much sleep over	0	0	0	0		
worry? Felt you were playing a						
useful part in things? Felt capable of making	0	0	0	0		
decisions about things?	0	0	0	0		
Felt constantly under strain?	0	0	0	0		
Felt you couldn't overcome your difficulties?	0	0	0	0		
Been able to enjoy your normal day-to-day activities?	0	0	0	0		
Been able to face up to your problems?	0	0	0	0		
Been feeling unhappy and depressed?	0	0	0	0		
Been losing confidence in	0	0	0	0		
yourself? Been thinking of yourself	0	0	0	0		
as a worthless person? Been feeling reasonably						
happy, all things considered	0	0	0	0		
Emergency Contraception Independent prescribing Long-term condition service Medicines Therapy Assessment	- (ATA)					
Medicines Use Review (MUR) Opioid Substitution Therapy (OS Sildenafil						
Medicines Use Review (MUR) Opioid Substitution Therapy (Os Sildenafil Trimethoprim						
Medicines Use Review (MUR) Opioid Substitution Therapy (Os Sildenafil						
Medicines Use Review (MUR) Opioid Substitution Therapy (OS Sildenafil Trimethoprim Vaccination						
Medicines Use Review (MUR) Opioid Substitution Therapy (OS Sildenafil Trimethoprim Vaccination None of the above 018 Which clinical services are that applies and indicate I Blood glucose testing Blood pressure check	e FUNDED by thow often you	deliver the servi		lease select all		
Medicines Use Review (MUR) Opioid Substitution Therapy (05 Sildenafil Trimethoprim Vaccination None of the above 018 Which clinical services are that applies and indicate I	e FUNDED by y how often you	deliver the servi		lease select all		
Medicines Use Review (MUR) Opioid Substitution Therapy (Ot Sildenafil Trimethoprim Vaccination None of the above O18 Which clinical services are that applies and indicate I Blood glucose testing Blood pressure check Community Pharmacy Anti-coar	e FUNDED by y how often you	deliver the servi		lease select all		
Medicines Use Review (MUR) Opioid Substitution Therapy (05 Sildenafil Trimethoprim Vaccination None of the above Q18 Which clinical services are that applies and indicate I Blood glucose testing Blood pressure check Community Pharmacy Anti-coag	e FUNDED by y how often you	deliver the servi		lease select all		
Medicines Use Review (MUR) Opioid Substitution Therapy (Ot Sildenafil Trimethoprim Vaccination None of the above O18 Which clinical services are that applies and indicate I Blood glucose testing Blood pressure check Community Pharmacy Anti-coat Community Pharmacy Gout Ma Emergency Contraception	e FUNDED by y how often you	deliver the servi		lease select all		
Medicines Use Review (MUR) Opioid Substitution Therapy (OS Sildenafil Trimethoprim Vaccination None of the above Q18 Which clinical services are that applies and indicate I Blood glucose testing Blood pressure check Community Pharmacy Anti-coar Community Pharmacy Anti-coar Emergency Contraception Independent prescribing Long-term condition service	e FUNDED by y how often you i	deliver the servi		lease select all		
Medicines Use Review (MUR) Opioid Substitution Therapy (OS Sildenafil Trimethoprim Vaccination None of the above O18 Which clinical services are that applies and indicate I Blood glucose testing Blood pressure check Community Pharmacy Anti-coal Community Pharmacy Gout Ma Emergency Contraception Independent prescribing Long-term condition service	e FUNDED by y how often you i	deliver the servi		lease select all		
Medicines Use Review (MUR) Opioid Substitution Therapy (Ot Sildenafil Trimethoprim Vaccination None of the above O18 Which clinical services are that applies and indicate I Blood glucose testing Blood pressure check Community Pharmacy Anti-coat Emergency Contraception Independent prescribing Independent prescribing Long-term condition service Medicines Therapy Assessment Medicines Use Review (MUR)	e FUNDED by y how often you of	deliver the servi		lease select all		
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Figure A5. Questions 16–18.

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Q19								
For a typical SHIFT at	your practice si	te, how ma	ny hours do yo	u work?				
O ≤ 4 hours								
O 4.1~6 hours								
○ 6.1~8 hours								
O 8.1~10 hours								
O 10.1~12 hours								
O 12.1-14 hours								
○ > 14 hours								
0 - 24 110013								
Q20								
How many hours do y	ou work at your	practice sit	te in a typical W	VEEK?				
≤ 20 hours								
O 20.1~30 hours								
O 30.1-40 hours								
O 40.1~50 hours								
O 50.1~60 hours								
○ > 60 hours								
O P OU HOURS								
is Five Index								
ig Five Index								
Q21								iG
Personality traits of inc	lividual may cor	stributo to r	parcaived works	nlaca anvi	ronmont			
Personality traits of inc				place envi	ronment.			
Personality traits of inc Please rate the following				place envi	ronment.			
	ng statements:		one who"	place envi	ronment.			
				place envi Agree	ronment. Strongly agree			
	ng statements: '	'I am some	one who"					
Please rate the following Is talkative Tends to find fault with	Strongly disagree	'I am some Disagree	Neither agree	Agree	Strongly agree			
Please rate the following Is talkative Tends to find fault with others	Strongly disagree	'I am some	Neither agree	Agree	Strongly agree			
Please rate the following is talkative Tends to find fault with others Does a thorough job	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
Please rate the following Is talkative Tends to find fault with others	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does at thorough job is depressed or blue is original, comes up with	statements: Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job is depressed or blue is original, comes up with new ideas	statements: Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job is depressed or blue is original, comes up with new ideas is reserved	statements: Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish	statements: Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
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Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish	statements: Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree			
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Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless	strongly disagree	Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others	strongly disagree	Disagree Output Disagree Output Ou	Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well	statements: Strongly disagree	Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree O Agree O Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job is depressed or blue Is original, comes up with new Ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles	strongly disagree	Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many	statements: Strongly disagree	Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree O Agree O Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job is depressed or blue is original, comes up with new ideas is reserved is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well is curious about many different things	statements: Strongly disagree	Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many different things Is full of energy Starts quarrels with others	statements: Strongly disagree	Disagree Ohisagree Disagree Disagree Ohisagree Ohisagree Ohisagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many different things Is full of energy Starts quarrels with others Is a reliable worker	statements: Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree	Disagree Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree O	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many different things Is full of energy Is full of energy Is full of energy Is a reliable worker Can be tense	statements: Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree	Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree O Agree O O O O O O O O O O O O O O O O O O	Strongly agree			
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Is talkative Tends to find fault with others Does at thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many different things Is full of energy Starts quarrels with others Is a reliable worker Can be tense Is ingenious, a deep thinker Generates a lot of	statements: Strongly disagree	Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree O	Strongly agree			
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Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many different things Is full of energy Starts quarrels with others Is a reliable worker Can be tense Is ingenious, a deep thinker Generates a lot of enthusiasm	statements: Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree	Disagree Disagree Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree O Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many different things Is full of energy Starts quarrels with others Is a reliable worker Can be tense Is ingenious, a deep thinker Generates a lot of enthusiasm	statements: Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree	Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree Agree Agree Agree	Strongly agree			
Is talkative Tends to find fault with others Does a thorough job is depressed or blue is original, comes up with new ideas Is reserved is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well is curious about many different things is full of energy Starts quarrels with others Is a reliable worker Can be tense Is ingenious, a deep thinker Generates a lot of enthusiasm Has a forgiving nature Tends to be disorganised	statements: Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree	Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree Agree Agree Agree	Strongly agree			
Is talkative Tends to find fault with others Does at thorough job Is depressed or blue Is original, comes up with new ideas Is reserved Is helpful and unselfish with others Can be somewhat careless Is relaxed and handles stress well Is curious about many different things Is full of energy Starts quarrels with others Is a reliable worker Can be tense Is ingenious, a deep thinker Generates a lot of enthusiasm Has a forgiving nature Tends to be disorganised Worries a lot	statements: Strongly disagree Strongly disagree Strongly disagree Strongly disagree Strongly disagree	Disagree Disagree Disagree Disagree Disagree Disagree	Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree Neither agree nor disagree	Agree Agree Agree Agree	Strongly agree			
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Figure A6. Cont.

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	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Is inventive	0	0	0	0	0
Has an assertive personality	0	0	0	0	0
Can be cold and aloof	0	0	0	0	0
Perseveres until the task is finished	0	0	0	0	0
Can be moody	0	0	0	0	0
Values artistic, aesthetic experiences	0	0	0	0	0
Is sometimes shy, inhibited	0	0	0	0	0
Is considerate and kind to almost everyone	0	0	0	0	0
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Does things efficiently	0	0	0	0	0
Remains calm in tense situations	0	0	0	0	0
Prefers work that is routine	0	0	0	0	0
Is outgoing and sociable	0	0	0	0	0
Is sometimes rude to others	0	0	0	0	0
Makes plans and follow them through	0	0	0	0	0
Gets nervous easily	0	0	0	0	0
Likes to reflect, play with ideas	0	0	0	0	0
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Likes to cooperate with others	0	0	0	0	0
Has a few artistic interests	0	0	0	0	0
Is easily distracted	0	0	0	0	0
Is sophisticated in art, music, or literature	0	0	0	0	0

▼ Pharmacist's Opinion

Q22										
Please rate your level o	ease rate your level of agreement with the following statements:									
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree					
I have adequate time for break/lunches at my practice site	0	0	0	0	0					
I am satisfied with the amount of time I have to do my job	0	0	0	0	0					
My employer provides a work environment that is conducive to providing safe and effective primary care	0	0	0	0	0					
My site has adequate pharmacist staff to provide safe and effective primary care	0	0	0	0	0					
My site has adequate technician staff to provide safe and effective primary care	0	0	0	0	0					
My site has adequate retail assistant staff to provide safe and effective primary care	0	0	0	0	0					

•	Pharmacy Practice Site
0	Q23
	How long is the average patient wait time at your practice site?
	0-10 minutes
	O 11-20 minutes
	O 21-30 minutes
	> 30 minutes
	O Not applicable

Figure A6. Questions 19–23.

Pharmacy 2023, 11, 21 16 of 19

	Q24								
	Approximately how many patients require a NEW prescription filled per day at your site?								
	○ ≤20								
	© 21-40								
	O 41-60								
	O 61-80								
	O 81-100								
	>100								
	O Not applicable								
0	Q25								
	Approximately how many patients require a REPEAT per day at your site?								
	○ ≤20								
	O 21~40								
	○ 41-60								
	O 61-80								
	O 81-100								
	○ >100								
	O Not applicable								
	Q26								
	Approximately how many patients require clinical services per day at your site where you receive remuneration?								
	O <5								
	○ 5-10								
	○ 5-10 ○ 11-15								
9	O 11-15								
	○ 11-15 ○ >15								
	○ 11-15 ○ > 15 ○ Not applicable								
	○ 11-15 ○ > 15 ○ Not applicable Output Outp								
	11-15 > > 15 O Not applicable O27 Approximately how many patients require clinical services per day at your site where you receive NO remuneration?								
	11-15 > > 15 O Not applicable O27 Approximately how many patients require clinical services per day at your site where you receive NO remuneration? < < 5								
	○ 11-15 ○ > 15 ○ Not applicable O27 Approximately how many patients require clinical services per day at your site where you receive NO remuneration? ○ < 5 ○ 5-10								

Figure A7. Questions 24–27.

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	Q28
	Does your practice site offer a private patient consultation area?
	○ Yes
	○ No
	O Not applicable
	Q29
	Would you characterise your practice site as
	O Very spacious
	Somewhat spacious Neither spacious nor cramped
	Nether spacious nor cramped Somewhat cramped
	○ Very cramped
	O Not applicable
)	ogo For any average daytime shift, the number of pharmacy staff on duty include: (please select all that applies and provide the number in the text box)
	Pharmacy Retail Assistant Others

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lease rate the followin					
our WORKPLACE is	recognised fo	r its"			
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Adaptability	0	0	0	0	0
Stability	0	0	0	0	0
Being reflective	0	0	0	0	0
Being innovative	0	0	0	0	0
Being quick to take advantage of opportunities	0	0	0	0	0
Taking individual responsibility	0	0	0	0	0
Risk-taking	0	0	0	0	0
Opportunities for professional growth	0	0	0	0	0
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Autonomy	0	0	0	0	0
Being rule-oriented	0	0	0	0	0
Being analytical	0	0	0	0	0
Paying attention to detail	0	0	0	0	0
Confronting conflict directly	0	0	0	0	0
Being team-oriented	0	0	0	0	0
Sharing information freely	0	0	0	0	0
Being people-oriented	0	0	0	0	0
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Fairness	0	0	0	0	0
Not being constrained by many rules	0	0	0	0	0
Tolerance	0	0	0	0	0
Informality	0	0	0	0	0
Decisiveness	0	0	0	0	0
Being competitive	0	0	0	0	0
Being highly organised	0	0	0	0	0
Being achievement- oriented	0	0	0	0	0

Figure A8. Cont.

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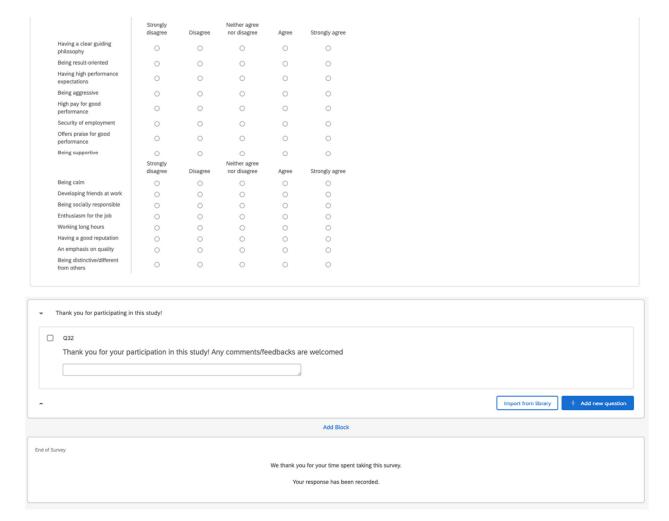


Figure A8. Questions 28–32.

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