https://doi.org/10.18549/PharmPract.2020.1.1696

Original Research

A naturalistic observation study of medication counseling practices at retail chain pharmacies

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Received (first version): 26-Sep-2019 Accepted: 19-Jan-2020 Published online: 24-Feb-2020

Abstract

Objective: This study evaluated medication counseling procedures and trends at retail pharmacies in the Houston metropolitan area through a naturalistic observational study.

Methods: A blinded cross-sectional observational study was conducted at retail pharmacies in the Houston metropolitan area. Data were collected by trained observers utilizing an observational log, to record various parameters that could have an impact on the duration of patient-pharmacist interaction in a naturalistic pharmacy practice setting. Additionally, indicators of counseling such as utilization of the counseling window and performance of show-and-tell were recorded. Statistical analyses included descriptive statistics, t-tests, Pearson correlations, ANOVAs, and multiple linear regressions.

Results: One hundred and sixty-five interactions between patients and pharmacy staff were recorded at 45 retail pharmacies from 7 retail pharmacy chains. The counseling window was utilized in only 3 (1.81%) out of 165 observations and the show-and-tell process was observed in just 1(0.61%) interaction during this study. Mean (SD) interaction time between patient and pharmacists [159.50 (84.50)] was not statistically different ($p>0.05$) from the mean interaction time between patients and pharmacy technicians [139.30 (74.19)], irrespective of type of the retail chain observed. However, it was influenced by the number of patients waiting in queue. Patient wait time significantly differed by the time of the day the interaction was observed, weekends and weekdays had significantly different wait times and patient interaction times Multiple linear regression analyses indicated that, patient interaction time, pharmacy chain type, initial contact (pharmacist/technician), and time of the day, were significantly associated with patient wait time whereas patient wait time, pharmacy chain type, number of patients in queue, and number of pharmacy technician were significantly associated with interaction time.

Conclusions: Our study found that the key indicators of counseling including the use of the counseling window and the show-and-tell process were absent, suggesting lack of adequate pharmacists counseling. Further studies are needed to evaluate the validity of this conclusion and the role of pharmacy services and its value towards medication use and safety.

Keywords

Counseling; Professional Practice; Pharmaceutical Services; Pharmacies; Pharmacists; Pharmacy Technicians; Waiting Lists; Cross-Sectional Studies; Linear Models; Texas

INTRODUCTION

The Federal Omnibus Budget Reconciliation Act of 1990 (OBRA '90) requires pharmacists to offer medication counseling to patients.[1] A survey of pharmacists after the implementation of OBRA'90 conducted in 1997 indicated that pharmacists associated with retail chains devoted more time to medication counseling after OBRA'90.[2] The Texas State Board of Pharmacy made it mandatory for pharmacists to provide medication counseling when all new prescriptions are filled and offer counseling on refills.[2] The law also mandates the pharmacist to interpret and evaluate a prescription drug or medication order and communicate to the patient or the patient's agent, information about the drug or device in which the pharmacist's professional judgement the pharmacist deems necessary.[2] Studies conducted previously indicate that many patients with chronic conditions require counseling which is unmet in the community pharmacy setting.[3-5] Certain medications like opioids need to be dispensed only under pharmacist supervision.[6] However, medication counseling may be often declined by the patients.[3,7] Understanding the role of pharmacists and technicians in the patient counseling process is thus necessary.

Multiple studies have demonstrated that medication counseling services delivered by pharmacists improved medication adherence and overall treatment satisfaction.[8-13] Pharmacists have the tools and expertise to deliver medication counseling to improve patient outcomes and reduce healthcare costs.[14] Studies have already been conducted on medication counseling and overall satisfaction in the pediatric population highlighting the fact that the pharmacist infrequently interacts with the children as most of the times, a prescription is picked up by the parent.[11,15] Thus, counseling at the community pharmacy level is not consistent.[16-18] Further, there is a lack of recent literature regarding pharmacist counseling practices and its effect on patients.[19] The retail pharmacist is uniquely positioned to interact and offer medication counseling to patients. Pharmacists act as a powerful lever to ensure that patients are taking the correct medication in the right way.[20]

As per the Texas Law regarding patient counseling and provision of drug information, every retail or community pharmacy must have a dedicated counseling area or

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window which is easily accessible to both patients and pharmacists.[2] This counseling area must be designed to maintain confidentiality and privacy of the patient, so that the pharmacist can discuss any confidential information regarding medication use with the patient.[2] Many pharmacies have these counseling areas within the pharmacy where patients can obtain counseling services while maintaining confidentiality of their information. It should be noted that the counseling area is not the same as the drive-thru window. Rather pharmacy is required to have a counseling area and not a drive-thru window. But many pharmacies will have both, a counseling area inside the pharmacy and a drive-thru window. The drive-thru window is more like a fast food drive-thru window where prescription medications are dispensed. A counseling area within the pharmacy is different and can be a separate window away from the pharmacy counter or a room where pharmacist can provide information to the patient more privately. The extent of the use of this counseling area by pharmacists or technicians is not known.[21] This small area does take space from a pharmacy store. Hence its use and value should be evaluated.

Communicating with the patient is an art as well as a science.[22,23] Pharmacists are trained to perform various strategies to enhance their communication skills.[23,24] Some strategies including the use of open-ended questions and use of the show-and-tell technique is a way to improve pharmacist counseling and patients' handling of their medicine.[25,26] The show-and-tell technique involves providing a visual of the medication and explaining its use to the patient the labeling instructions and directions of use.[27] The use of visual techniques is known to improve human learning.[28] The use of the show-and-tell technique and the use of counseling window could be considered as some prime indicators of pharmacist counseling efforts. Previous studies have indicated that interaction between pharmacist and patient increases patients' knowledge of prescribed medicines and their satisfaction with counseling activities.[29,30]

Although, pharmacists are provided professional training on counseling patients and a separate area for counseling, it is not known if these opportunities are used adequately by the pharmacists.[19] The inconsistencies in the literature indicating lack of pharmacists counseling, and the lack of research on the use of counseling areas as well as specific techniques, guided the development of this naturalistic observational study to evaluate medication counseling trends within retail chain pharmacies.[31] The objective of the study was to observe interactions of the pharmacy staff with patients and the time associated with this interaction. In addition, we observed the presence or absence and the duration of the use of the counseling window and the use of show-and-tell technique in a community retail pharmacy. Further, the study also evaluated factors that affect the interaction time and patient wait time between pharmacy staff and patients.

METHODS

Study design

The study was a blinded, naturalistic cross-sectional observational study conducted over a period of 12 weeks at retail pharmacies in the Houston metropolitan area. The study was blinded to the pharmacy staff to avoid the Hawthorne effect.[32] Hawthorne effect, also referred to as the observer effect is a type of reactivity which modifies an aspect of individual behavior in response to their awareness of being observed.[32] An observational study data collection tool was created. Data collection methods were validated by three observers before collecting the data. This blinded observational study was approved by the University Institutional Review Board.

Sample selection and size

Different retail chain stores within the Houston area were identified leading to 7 major retail chain pharmacies namely Walmart, Walgreens, CVS, HEB, Kroger, Randalls and Target. Forty-five pharmacies from these 7 retail pharmacy chains in the Houston area were considered. Selection of the stores was not random but rather based on the conveniences of observers to have adequate access to the store during the time period considered. Maximum number of CVS stores were observed followed by Walgreens and so forth with minimum stores observed was for Target. This distribution was an attempt to be representative of the number of these individual chains in the Houston metropolitan area. Pharmacy locations and the number of pharmacies to be visited for data collection were decided to ensure maximum geographic coverage within the Houston area and based on the conveniences of the data collectors.

Instrument design

A computer-based observation data collection tool was designed to record data including various parameters that could potentially impact interactions between patients and pharmacy staff (Online appendix). The tool captured variables such as number of observations, frequency of the retail pharmacy chain observed, day and time observation was performed, observer code, presence of drive-thru window in the pharmacy, presence of a separate counseling window in the pharmacy, number of pharmacists and pharmacy technicians present, gender of each pharmacy staff, number of patients waiting in the queue, gender of the patient, amount of time patient waited (wait time) before being seen by the pharmacy staff, interaction time with pharmacy staff, which pharmacy staff was the initial interaction with, any subsequent interactions and with which pharmacy staff member, and finally was show-and-tell performed by pharmacy staff or counseling window used for counseling.

Patient wait time was calculated as the time a patient had to wait in the line before their first interaction with the pharmacy technician or the pharmacist. Patient interaction time was calculated as the time the patient interacted with the pharmacy staff either at the prescription pick-up counter or counseling window. Both wait time and interaction time were recorded in seconds. Number of patients in the queue were counted as the count of patients waiting in the line excluding the patient talking to the pharmacy staff. The performance of show-and-tell process was ascertained by observing the interaction between pharmacist and the patient. The show-and-tell process was considered to be performed when the

pharmacist either opened the medication package to show the tablets or capsule and explain the drug label instructions or directions for the correct usage of the drug to patients. If the pharmacy had a separate counseling window it was recorded and, if during the observation duration, the pharmacist took any patients to that location (counseling window) and counseling was performed then it was considered as the use of the counseling window. Finally, if the patient directly picked up a medication from the aisle and brought it to the billing counter it was considered as an OTC medication encounter.

Data collection

Data were collected by three trained observers that received training on how to use the computer-based observation data collection tool as well as the use of the stop-watch to measure the wait and interaction times. The data collection tool was validated for consistency between the study observers by conducting a pilot study where simultaneous observations were made by all three observers at 2 retail pharmacies to ensure uniformity in data collection. Only after 100% consistency, (with at least 3 observations) was the data collection started. The observational visits were brief (10-12 minutes), allowing the study to be blinded to both patients and pharmacy staff. Data were collected from a distance, by visual observation alone. No personal or confidential information was collected. No conversation between pharmacy staff and patients was overheard or recorded. The observers did not interfere in anyway with the pharmacy staff and patient interaction. Observers acted as customers of the store and waited at a distance where pharmacy staff could not be distracted, however the observers ensured an adequate view of the interaction between the pharmacy staff and the patient. Observations were collected on all days of the week; and at different time periods such as morning: 6:00 AM to 11:59 AM, afternoon: 12:00 noon to 5:59 PM, and evening: after 6:00 PM. Each retail location was observed at least twice, however on different days of the week and during different time periods. Each observer collected data on one patient interaction at a time with a single stopwatch. Data collection started on 14th November 2017 and ended on 12th March 2018.

Data analysis

Data were coded and analyzed using SAS version 9.4 (SAS Institute Inc, Cary, NC). Descriptive statistics were performed for various parameters collected. Pearson correlation analyses were performed to check association between patient interaction time with the pharmacy staff and patient wait time. One way ANOVA test was performed to check association between patient waiting time within the retail pharmacy chain observed. Independent sample t-tests were conducted to check association between patient wait time and patient interaction time with gender of patient, gender of pharmacist, number of pharmacists in the pharmacy, type of medication picked up (prescription or over the counter) and time of the day data were collected. Finally, two multiple linear regression analyses were performed after model assumptions were met to identify predictors of interaction time and patient wait time, respectively with number of patient in the queue, number of pharmacists in the pharmacy, time of the day data was collected, the pharmacy retail chain observed, initial contact (pharmacist or technician), sex of patient, sex of pharmacist, type of medication picked up, and the day of the week the interaction was observed. All analyses were conducted at a priori significance level of 0.05.

RESULTS

A total of 172 interactions were captured in 7 retail pharmacy chains (Walmart, Walgreens, CVS, HEB, Kroger, Target and Randalls) at 45 retail locations in the Houston area out of which 165 interactions were considered valid. Seven interactions were removed due to incomplete information on interaction and patient wait time. Of the pharmacies observed, approximately 59% of the observations were conducted at pharmacies with drive-through services. All pharmacies observed (100%) had a dedicated counseling area (window). Out of all 165 interactions, show-and-tell was observed only once, whereas the counseling window was only used 3 times. Of the 165 patient interactions observed, 159 observations (96.53%) were for prescription medications and 6 observations (3.46%) were for OTC products. All 6 patients with OTC products interacted directly with the pharmacist.

Correlation analysis indicated significant but weak correlation between patient wait time and patient interaction time ($r=0.19$, $p<0.05$). The descriptive statistics from the study are presented in Table 1 by wait time and interaction time. Most of the pharmacies had only one pharmacist present (83.03%) and the remaining had two pharmacists. It should be noted that 68% of all observations were conducted where 2 or more pharmacy technicians were present. Most of the interactions were observed in the afternoon (60%) followed by evening (36.97%) and the least number of interactions were observed in the morning (3.03%). Most of the interactions were observed on a weekday (60.52%) and the rest (39.47%) were observed on weekends.

The mean (SD) patient wait time across all observations was 55.54 (94.28) seconds. Initially, patients interacted mainly with the pharmacy technician (65.45%) as compared with the pharmacist (34.55%). Only on 4 occasions, there was a subsequent interaction with a pharmacist after an initial interaction with the technician. The mean (SD) wait time (seconds) for pharmacist was 84.28 (122.80) and significantly higher ($p=0.004$) compared to pharmacy technician which was 40.37 (71.16) (Table 1). One-way ANOVA test indicated that different retail pharmacy chains had significantly different patient wait times (Table 1). Patient wait time significantly differed ($p<0.05$) by the time of the day the data were collected (Table 1).

The mean (SD) patient interaction time (seconds) across all observations was 146.24(78.25). There was no significant difference ($p>0.05$) between the mean (SD) duration (seconds) of patient interaction time with pharmacist, [159.5(84.50)] as compared to pharmacy technicians [139(74.19)]. Different retail pharmacy chains had significantly different ($p<0.05$) patient interaction time with the pharmacy staff (Table 1). Patient interaction time significantly increased ($p<0.05$) as the number of technicians in the pharmacy increased (Table 1). One

Table 1. Characteristics of pharmacy chains observed by patient wait time and interaction time

Parameter	N (%)*	Wait Time Mean (SD) seconds	p-value	Interaction Time Mean (SD) seconds	p-value
Number of pharmacists present			0.1		0.43
1	137 (83.03)	50.20 (94.88)		148.40 (77.85)	
2	28 (16.97)	81.67 (88.28)		135.60 (80.77)	
Gender of pharmacist			0.99		0.06
Female	131 (79.39)	55.50 (38.48)		140.50 (78.72)	
Male	34 (20.61)	55.70(28.66)		168.60 (73.27)	
Number of technicians present			0.85		0.003
0	2 (1.21)	7.50 (10.60)		110.50 (50.20)	
1	50 (30.30)	51.74 (100.24)		115.06 (53.72)	
2	81 (49.09)	59.81 (99.58)		156.48 (85.88)	
3	32 (19.39)	53.68 (73.02)		171.31 (78.37)	
Initial contact of patient with			0.004		0.11
Technician	108 (65.45)	40.37 (71.16)		139.30 (74.19)	
Pharmacist	57 (34.55)	84.28 (122.80)		159.50 (84.50)	
Gender of patient			0.31		0.06
Male	87 (53.05)	48.21 (75.10)		133.90 (66.38)	
Female	78 (46.95)	63.14 (112.50)		155.60 (79.30)	
Number of patients remaining in queue			0.46		<.0001
0	72 (43.64)	36.88 (95.68)		117.09 (57.01)	
1	41 (24.85)	64.75 (104.64)		153.90 (83.03)	
2	24 (14.55)	67.12 (94.68)		145.62 (66.71)	
3 and above	28 (16.97)	88.89 (44.93)		208.58 (76.28)	
Time of the day			0.03		0.79
Morning	5 (3.03)	161.20 (236.05)		123.20 (9.25)	
Afternoon	99 (60.00)	48.90 (78.38)		146.30 (80.28)	
Evening	61 (36.97)	57.65 (97.69)		148.04 (78.46)	
Day of the week			0.01		0.01
Weekday	92 (60.52)	68.46 (109.60)		157.40 (74.09)	
Weekend	60 (39.47)	30.66 (48.53)		127.70 (64.87)	
Type of retail pharmacy chain			0.008		0.001
CVS(15)	48 (29.09)	62.35 (113.39)		129.70 (72.13)	
Walgreens(9)	27 (16.36)	28.14 (37.59)		169.55 (89.54)	
Walmart(7)	27 (16.36)	114.55 (130.20)		185.55 (68.52)	
Kroger(6)	25 (15.15)	46.60 (77.64)		133.72 (94.15)	
Randalls(4)	17 (10.30)	35.52 (61.91)		129.11 (56.44)	
HEB(2)	16 (9.70)	34.37 (38.44)		107.12 (45.80)	
Target(2)	5 (3.03)	0 (0.00)		213 (46.68)	

*missing values were noted for certain variables.

interesting observation was that the proportion of time patients spent interacting with the pharmacy staff (81.98%) was higher than waiting in the queue (18.01%).

Multiple linear regression analysis (Table 2) indicated that patient wait time was significantly associated with patient interaction time (beta=0.24, p=0.04). Walgreens had a significantly higher wait time (beta=123.84, p<0.001) than the reference (Walmart). Wait time for pharmacy technicians was found to be significantly lower (beta= -40.69, p=0.01) in comparison to the wait time for pharmacist. Patient wait times were significantly lower in the afternoon in comparison to morning (Table 2).

Multiple linear regression analysis to identify factors associated with patient interaction time (Table 3) indicated that, patient wait time was significantly associated with patient interaction time (beta=0.13, p=0.04). CVS had significantly lower patient interaction time (beta= -45.89, p=0.01) compared to the reference (Walmart). Surprisingly as the number of patients in the queue increased the patient interaction time significantly increased (Table 3). As the number of technicians increased, the interaction time of patients also significantly increased (Table 3). As the number of pharmacists increased, interaction time was observed to reduce by 33.71 seconds on an average.

DISCUSSION

The findings of this study indicate that there was a lack of use of the counseling window, and the show-and-tell technique in the pharmacies studied. Number of patients in the queue impacted the duration of patient interaction time with the pharmacist. However, patients spent more time interacting with the pharmacist than waiting in the queue. Also, when the number of pharmacists were higher (more than 1) the interaction time decreased. Further, the wait time for pharmacists was higher than that for the pharmacy technician.

Over half of the patients interacted only with the pharmacy technician, thus indicating absence of patient counseling by pharmacist. Only on 4 occasions there was a subsequent interaction with the pharmacist after an initial interaction with the technician, further re-emphasizing lack of pharmacist counseling. These results were in concordance with a previous study by Kimberlin *et al*. which highlighted similar results.[33] It is vital for the patients to know the importance of interacting with the pharmacist for a better therapeutic experience.[5,34,35]

Although, not significant, female patients had a higher interaction time in comparison to males, an anticipated

Table 2. Factors associated with patient wait time

Parameter	Parameter estimate (95%CI)	P-value
Patient interaction time	0.24 (0.01−0.47)	0.04
Pharmacy retail chain		
Walmart	ref	
Walgreens	123.84 (62.53−185.16)	<0.001
CVS	36.16 (-12.22−84.54)	0.14
HEB	5.33(-77.39−88.08)	0.89
Target	-25.77 (-119.43−67.88)	0.58
Kroger	3.22 (-63.15−69.60)	0.92
Randalls	2.73(-76.18−81.65)	0.94
Number of patients in the queue		
0	ref	
1	7.90 (-28.81−44.63)	0.67
2	27.18 (-18.15−72.53)	0.23
3 or more	-12.95(-64.45−38.54)	0.61
Initial contact		
Pharmacist	ref	
Technician	-40.69 (-71.38− -10.00))	0.01
Gender of patient		
Males	ref	
Females	24.10 (-5.04− 53.25)	0.10
Number of technicians		
1	ref	
2	-57.88 (-112.59− -3.16)	0.03
3	-55.92 (-125.40− 13.58)	0.11
Number of pharmacists		
1	ref	
2	-25.17(-72.90− 22.58)	0.29
Gender of the pharmacist		
Males	ref	
Females	-11.43 (-49.38− 26.50)	0.55
Time of the day		
Morning	ref	
Afternoon	-89.08 (-169.94− -8.22)	0.03
Evening	-82.39 (-165.43− 0.63)	0.05
Day of the week		
Weekday	ref	
Weekend	-40.16(-80.58−0.25)	0.05

result as similar results were observed in a study by Odukoyo *et al*. which showed that female patients spent significantly more time at the drive-thru window as compared to male patients.[36] However, there was no significant difference in the time the pharmacist or pharmacy technician spent with the patient. This indicates that the pharmacist did not spend any more time with the patient than the time it took for the pharmacy technician to hand over the prescription and complete the transaction. This study points out the need to provide better counseling services by the pharmacist to patients receiving new medications for chronic conditions as reported in a previous study which emphasizes the importance of direct encounter between the pharmacist and patient.[33] The finding that more patients interacted with the pharmacy technician than the pharmacist was in concordance with a study by Odukoya *et al*.[36] which indicated that over half of the patients interacted with the technician followed by no subsequent interaction with the pharmacist.

The lack of the use of the counseling window indicates that majority of the patients were not counseled confidentially. Further, the value of such a counseling window diminishes as its utility is reduced with lack of use. It is not clear if pharmacy staff are aware of the value of the counseling area both as a tool to improve medication use as well as the value of this property within the pharmacy. No previous study has measured this effect and our study was the first to identify this lack of use of the counseling window. There was also no use of the show-and-tell technique by pharmacy staff. Although, it is not clear why this was the case, the fact that it was observed only once in our study is not good for the profession of pharmacy in general, considering the beneficial effects of the technique proved in previous studies.[27-30] Pharmacists are trained to practice the show-and-tell technique, it is not clear if it is the time constraint within the pharmacy setting or the belief that such a process is not worth doing that leads to such behaviors. Further studies are needed to address this question.

There was a statistically significant relationship between the number of patients remaining in the queue and the initial duration of contact between the pharmacy staff and the patient. As the number of patients in the queue increased the interaction time significantly increased as well. In our study patient wait time was a significant predictor of patient interaction time (initial contact) these results are in concordance with a previous study which indicated that patient wait time impacted the interaction time.[37] Previous studies also agree on the fact that number of patients in the queue impacted interaction time.[2,36]

In our study, we did not find much evidence for consistent pharmacists counseling. The pharmacist's responses to patients' cues with respect to counseling have proven to

Table 3. Factors associated with patient interaction time

Parameter	Parameter estimate (95%CI)	P-value
Patient wait time	0.13 (0.005–0.25)	0.04
Pharmacy retail chain		
Walmart	ref	
Walgreens	-2.80 (-50.57–44.96)	0.90
CVS	-45.89 (-80.90– -10.89)	0.01
HEB	8.67 (-52.17–69.51)	0.77
Target	61.24 (-6.91–129.39)	0.07
Kroger	-6.81 (-55.63–42.00)	0.78
Randalls	24.24 (-33.65–82.15)	0.40
Number of patients in the queue		
0	ref	
1	28.90 (2.33–55.47)	0.03
2	28.23 (-4.93–61.41)	0.09
3 or more	66.60 (29.90–102.22)	<0.001
Initial contact		
Pharmacist	ref	
Technician	-1.29 (-24.45–21.88)	0.91
Gender of patient		
Males	ref	
Females	17.01 (-4.44–38.47)	0.11
Number of technicians		
1	ref	
2	46.39 (6.82–87.03)	0.02
3	68.22 (17.98–118.46)	0.01
Number of pharmacists		
1	ref	
2	-33.71 (-68.48–1.06)	0.05
Gender of the pharmacist		
Males	ref	
Females	3.42 (-24.51–31.37)	0.80
Time of the day		
Morning	ref	
Afternoon	22.38 (-38.03–82.81)	0.46
Evening	11.24 (-50.69–73.19)	0.72
Day of the week		
Weekday	ref	
Weekend	-15.48 (-45.54–14.56)	0.3

have therapeutic value and indicated to improve medication adherence.[38,39] Further, our study shows inadequate counseling services by the pharmacist as reported in a previous study which reported overall low rates of patient counseling within the Kansas City area.[40] A study carried out in Brazil also indicated poor guidance by the pharmacist in satisfactory management of headache.[41] Most of the patient's first interaction with the pharmacy technician followed by no subsequent interaction could be one of the reason for the overall absence of observed patient counseling by pharmacists in our study. This study can serve as useful evidence to policy makers. For example a mandate that all patients should receive counseling only in the counseling window by pharmacist, may change the practice of pharmacy and the role of the pharmacists.

One of the limitations of the study could be that the study was just restricted to the Houston metropolitan area and the sampling method was a convenience sample. Hence the sample may not be representative to generalize across the state or nationally. The observers were unable to identify whether it was a new prescription or refill, or actually hear if counseling was provided at the time of dispensing the medication. While our study did not collect data on refills versus new prescriptions, it is highly unlikely that all interactions between the patient and pharmacy technician were for only refill prescriptions. These days many pharmacy chains have developed a system to inquire if the patient would like to be counseled by the pharmacist.[2] It was not observed if this was waived by patients for most of our observations, a scenario highly unlikely but possible. The study findings however, raised important issues regarding the role of pharmacists and pharmacy technicians in the medication counseling process for patients. Further research is needed to ascertain these findings in a larger patient population in a wider area so that the conclusions of the study are more generalizable.

CONCLUSIONS

There was a lack of use of the counseling window as well as the show-and-tell technique of counseling by pharmacy staff. Patient wait time impacted the interaction time, however there could be other factors impacting the amount of time pharmacists spend interacting with patients. Lack of adequate evidence of counseling by pharmacist and pharmacy technicians was evident.

DISCLAIMER

Part of this study was presented as a poster at the Professional Society of Pharmacoeconomics and Outcomes Research Conference in 2018 at Baltimore, Maryland, USA.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest with respect to the research, authorship and publication of this article.

FUNDING

The authors received no financial support for the research, authorship, or publication of this article.

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