Best Practice Strategies Utilized by Therapist to Reduce the Rate of Patient Missed Appointments

Dissertation

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Abstract

The healthcare system has demonstrated significant difficulty in minimizing patient cancellations and no show rates. Dodd Outpatient Rehabilitation Services at The Ohio State University Medical Center has displayed a 20.66% cancellation rate/no show rate from December 2007 to September 2008. The goal of this study was to identify the best practice strategies utilized by staff therapists at Dodd Outpatient Rehabilitation, to minimize cancellation and no show rates in the department and to investigate the impact of exit interviews that incorporate best practice strategies. A Best Practice Survey (BPS) was developed by the investigating team. The survey instrument was designed to identify the practices that therapist used to encourage patient attendance. The individuals who participated in the study were divided into two groups. The first group was composed of therapists with an average cancellation and no show rate less than or equal to 19%. All participants completed the BPS and the results were compared. The information from the literature review and the results of the BPS was utilized to create a one hour in-service that approximately 50% of the subjects, were randomly selected to attend. The intervention group was instructed to utilize the recommendation introduced during the in-service for a two month period. The control group received no intervention. The cancellation/no show rate of the two groups were compared to determine if the utilization of an exit interview that incorporated best practice strategies would
decrease the rate of missed therapy appointments. The findings suggest that an individual therapist action alone does not significantly minimize cancellation and no show rates.
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CHAPTER 1

Introduction

In recent years, the healthcare system has demonstrated significant difficulty in minimizing patient cancellations and no shows rates. When patients fail to attend medical appointments it impacts the continuum of care which may include both clinic and patient outcomes. Missed medical appointments have resulted in decreased clinician satisfaction, poor utilization of limited resources, and slimmer profit margins.

Dodd Outpatient Rehabilitation Services at The Ohio State University Medical Center has displayed a 20.66% cancellation rate/no show rate from December 2007 through September 2008. This high rate of missed appointments has resulted in a significant loss in revenue for the department, has diminished the staff’s ability to optimize therapeutic outcomes, and has impacted the therapists’ ability to manage schedules. The goal of this study is to identify the best practice strategies utilized by staff therapists at Dodd Outpatient Rehabilitation, to minimize cancellation and no shows rates in the department, to identify the best scheduling procedure, and to outline recommendations that will decrease the incidence of missed appointments. The findings have the potential to impact clinic revenue, patient outcomes, and clinician satisfaction.
Background of the Clinic

The Ohio State University Dodd Outpatient Rehabilitation Clinic (Dodd Outpatient Rehab) is a comprehensive rehabilitation setting located at 2050 Kenny Road Columbus Ohio 43215, in the Martha Morehouse Medical Plaza. The clinic employs nine occupational therapists, twelve physical therapists, three speech and language pathologists, two social workers, one patient care resource manager (PCRM), three office workers, and two team leaders. The OSU Dodd outpatient rehabilitation clinic provides a variety of specialty programs designed to address the client’s individualized needs. The OSU Clinical Program includes:

- Driving Rehabilitation
- Orthopedic Physical Therapy
- Hand Therapy
- Aquatic Therapy
- Team Based Neurological Therapy
- Amputation Rehabilitation
- Burn Rehabilitation
- Specialty Clinics: Wheelchair Clinic, Seating and Positioning, Low Vision Clinic

The Dodd Outpatient Rehab department is composed of three separate cost centers including 9302, 9303 and 9305. The cost center 9302 is composed of nine physical therapists who primarily treat individuals with orthopedic conditions. The second cost center, 9303, is composed of five occupational therapists, four physical therapists and
three speech therapists. The therapists are grouped into multi-disciplinary teams that treat individuals with neurological diagnoses. The last cost center, 9305 is composed of five occupational therapists who mostly treat individuals with hand and upper extremity injuries.

The OSU outpatient rehabilitation clinic utilizes a carve out scheduling model. Traditional scheduling ideally allows healthcare providers to see an optimal number of patients within a scheduled workday while maintaining quality of care and patient satisfaction. Scheduling varies by specialty, facility, staffing, and workload. At the OSU outpatient rehabilitation clinic the following procedures can occur:

1. A patient contacts a centralized scheduling center to schedule an initial evaluation.
2. The clinic sends each new patient a welcome package.
3. The patient attends the initial evaluation with the therapist.
4. At the end of the evaluation process, the therapist fills out a scheduling request sheet and instructs the patient to schedule follow up appointments with the office staff.
5. The office staff schedules the patient for future appointments based on available treatment times and patient personal scheduling limitations.
6. After the schedule has been completed the staff prints a copy for the patient’s records.

The traditional model has patients booked on the therapist’s schedule in advance. When the therapist starts the day, ideally 100% of the schedule is booked. If a patient
calls with an urgent need or the clinic has a walk-in patient who requires splinting, the therapists will double book appointments. Double booking is a method within the traditional model that compensates for the inefficiencies within the scheduling system. More than one patient is intentionally assigned to specific time slots throughout the day. This is in an attempt to cover for missed or cancelled appointments. Double booking can help in the recovery of lost time and expenses; however, it also causes extended waiting periods for patients, added pressure to the staff, and payment of over-time.

The Dodd Outpatient Rehab department’s policies and procedures handout (Appendix A) defines a cancellation as an appointment that is cancelled prior to scheduled treatment time. A no show is when a patient does not report for treatment and does not provide notice to the department. Prior to the initial evaluation, the patient is provided with multiple sheets of paper to review and sign. One such paper is headed with the statement, “Outpatient Rehabilitation at OSU Therapy Attendance Expectation” (Appendix B). This heading is followed by a paragraph that explains to the patient that the department reserves the right to discontinue treatment and notify the patient’s physician following two consecutive no show appointments. The patient is required to sign the attendance policy and it is the responsibility of the therapist to confirm that the patient has read the attendance expectation statement.

Dodd Outpatient Rehab utilizes a system entitled Focus On Therapeutic Outcomes (FOTO) to collect outcomes data. According to the FOTO training manual, it is the oldest and largest independent database collection system used to measure physical rehabilitation outcomes. FOTO provides the clinic with quality measures that the
department can compare to the FOTO’s national norms. According to FOTO’s outcome data, which patients complete upon discharge, Dodd Outpatient Rehab has an average patient satisfaction level of 97.36% from December 2007 through August 2008.

**Significance of the Problem**

**Impacts Financial Status**

Throughout the past nine months, the OSU Dodd Outpatient Rehab Center has consistently displayed a cancellation and no show rate that ranges from 19% to 28% with a mean of 20.66%. The most significant cancellation and no show rate of 28% occurred in the month of December 2007. Figure 1 displays the variation of missed appointments among the three cost centers within the department. Cost center 9305; also known as the hand clinic, displays the lowest average cancellation and no show rate of 18%. The 9302 cost center has demonstrated the highest average cancellation no show rate of 24% from December 2007 to August 2008.
The average cancellation and no show rates of the OSU Dodd Outpatient Rehabilitation Department over the previous ten months have had a significant impact on the clinic’s revenue. The average unit of service per scheduled visit charged by individual therapists within cost centers 9302 and 9305 is 3.39 units of services per visit. In 2008, the average charge per unit of service is $106.22 for the department. This results in an average of $360.09 of lost billable services each time a patient cancels or no shows a scheduled appointment.

During the month of December 2007, Dodd Outpatient Rehab had a 29% rate of missed appointments, of the 3,414 visits scheduled. Of the visits scheduled, 551 appointments were cancelled by the patient and 370 appointments were not attended, and were therefore classified as no shows. The 921 scheduled visits not attended resulted in a
revenue loss of approximately $331,642.89 for the department. The numbers demonstrate the impact that patient missed appointments have on the financial goals of the Dodd Outpatient Rehab.

**Impacts Outcomes**

The statement, “Pay for Performance” represents a shift in the healthcare environment regarding reimbursement. In an effort to promote effective affordable healthcare, the Centers for Medicare and Medicaid Services (CMS) has announced the adoption of “Pay For Performance (P4P)” initiatives. The CMS website explains that P4P initiatives are being developed and utilized to enhance quality in healthcare. This shift in focus has spotlighted therapeutic outcomes. Dodd Outpatient Rehab understands the value of outcome data and its relationship to quality and reimbursement.

When patients miss scheduled appointments it disrupts the treatment plan and impacts the patient’s treatment outcomes. Following an initial evaluation at Dodd Outpatient Rehab, the therapist outlines a treatment plan that identifies an anticipated length of treatment. When a patient frequently misses scheduled appointments, the therapist is faced with barriers to accomplishing treatment goals. It is difficult to evaluate the success of the treatment plan, when it is not provided in a consistent manner.

**Reduces Therapist Satisfaction**

To offset the high frequency of missed appointments at Dodd Outpatient Rehab, therapists have utilized a scheduling model in which 100% of the day is booked and often appointments are doubled. Dodd Outpatient Rehab measures cost center productivity based on units of service provided. One unit of service is equal to approximately 15
minutes of treatment. To achieve 100% productivity, the therapists at Dodd Outpatient Rehab are required to produce 25 units of service a day, which translates into 6 hours and 15 minutes of billable time for every eight hours worked. Within the remaining 105 minutes of the workday, the therapist is required to complete secondary work responsibilities such as attend meetings, complete documentation, enter daily charges, contact physician’s offices, respond to emails, return missed phone calls and participate in committee work when applicable. Within a one month time period therapists are required to attend approximately eight hours of meetings. At the completion of each work day therapist are required to enter daily charges, a task which takes approximately 10 minutes. The length of time a therapist requires to complete paperwork is determined by multiple variables such as caseload, number of evaluations completed, number of patients that require progress notes, and the experience of the therapist. For an eight hour work day therapist will typically schedule 7 to 10 patients depending on discipline and specialty.

In an effort to compensate for missed therapy appointments, therapists typically schedule patients for eight hours of an eight hour work day unless there is a meeting scheduled which results in double booked appointments. When every patient on the therapist’s schedule attends his or her appointment, the therapist doesn’t have time within the scheduled workday to address secondary duties due to the fact that the therapist is engaged in direct patient care tasks. The current scheduling system rewards the therapist with time to address secondary duties, when a patient misses an appointment. Unfortunately, the scheduling system utilized by the therapists at the Dodd Outpatient
Rehab may not motivate therapist to implement strategies to reduce cancellation and no show rates. Therapists at Dodd Outpatient Rehab are encouraged to overlap appointment times and double book patients. This scheduling method is designed to optimize therapists’ productivity, but it also results in increasing therapists’ stress levels and reduces time for completing documentation and related duties. Therapists within the clinic often cite discontent regarding secondary duties and the lack of time provided to complete them.

**Research Questions**

1. What is the best practice implemented by the therapists at the Dodd Outpatient Rehab to reduce cancellation and no show rates of patients?
2. Will implementation of exit interviews that incorporate best practice strategies following the initial evaluation reduce cancellation and no show rates at Dodd Outpatient Rehab?

**Hypotheses**

**Research Hypothesis I:** The scores on the best practice survey will differ between therapists with an average cancellation and no show rate of ≤19% compared with therapists with >19%.

**Null Hypothesis I:** The scores on the best practice survey will not differ between therapists with an average cancellation and no show rate of and no show rate of ≤19% compared with therapists with >19%.

**Research Hypothesis II:** The mean rate of patient cancellations and no shows of each therapist who utilize best practice strategies will differ from the mean rate of
cancellations and no shows of therapist who do not incorporate best practice strategies.

**Null Hypothesis II:** The mean rate of patient cancellations and no shows of each therapist who utilize best practice strategies will not differ from the mean rate of cancellations and no shows of therapist who do not incorporate best practice strategies.

**Definition of Terms**

**Cancellation:** Appointments that are cancelled prior to scheduled treatment time.

**Best Practice:** a practice which is most appropriate under the circumstances, esp. as considered acceptable or regulated in business; a technique or methodology that, through experience and research, has reliably led to a desired or optimum result.

**Exit Interview:** A conversation between a therapist and patient following the initial evaluation in which the clinics policies are reviewed, therapist expectations are presented, treatment goals are discussed and benefits of treatment are outlined.

**Missed Appointments:** Appointments that are missed due to a no show or cancellation.

**No Show:** Patients who do not report for treatment and do not provide notice to the department.

**Study Limitations**

Lack of subject participation in the study represents the greatest potential threat to internal validity. The data utilized in this study will be recorded by individual staff therapists, which may impact measurement error. During this study the control group and the intervention group will be working within the same department, which may result
in diffusion. Diffusion would result if therapists in the intervention group communicate information to the therapist in the control group. Dodd Outpatient Rehab is composed of therapists who have varying years of work experience. Three members of the staff will have been in the midst of their first year as licensed therapists when the initial data is collected. The passage of time may result in maturation effect. During the course of this investigation it is possible that some staff therapists will have retired, resigned or transferred positions, which would result in a loss of participants due to attrition.

Threats to external validity will limit the ability to generalize the results of this study to other settings. The study has tailored the intervention in order to address the needs of Dodd Outpatient Rehab, which may limit the application of the results to other medical settings. When introducing a new practice method, the excitement will create a novelty effect. The staff therapists at Dodd Outpatient Rehab may develop attitudes that effect performance during the study which could impact the results of the investigation.
CHAPTER 2

Introduction

The healthcare industry faces a high rate of missed appointments. According to Cashman, et al. (2004, p. 474), “Studies of adult patient appointment keeping indicate that no shows of between 15% and 30% in general medicine and urban community health centers are not uncommon, and some primary care clinics have noted no show rates as high as 50%.” Missed medical appointments have created scheduling challenges, disrupted the continuity of care, impacted the patient’s health status and have resulted in lost revenue in the healthcare arena. Research has explored the characteristics of individuals who tend to miss medical appointments, and various methods have been implemented by medical facilities to reduce the rate of non-attendance.

Non Attendance

When examining the impact of missed appointments in the healthcare arena, it is essential to identify trends. The literature supports a relationship between demographic factors and non attendance. Various studies have explored the relationship of missed medical appointments with patient satisfaction, wait time for appointments, transportation limitations, and patient perceptions. Identification of which patients are most likely to miss medical appointments is a complex task.
Cashman, et al. (2004) indicates that younger adults, women, and individuals of low economic status are at higher risk of no showing for appointments. Individuals who are insured by Medicaid are more likely to miss scheduled medical appointments than individuals who are insured privately. Patients who are working with first year residents have a high rate of non attendance versus individuals scheduled with providers who are more experienced. Studies have shown that individuals who are able to schedule an appointment at a desired date and time have a lower rate of non attendance than individuals who were provided with alternative appointment schedules.

Some individuals miss healthcare appointments due to emotional and cognitive limitations. A study conducted by Mackin and Arean (2006) claims that individuals who have memory impairments and depression are more likely not to attend medical appointments, and therefore recommends that medical facilities utilize memory assessments and depression screens to predict which patients will display poor attendance. Frequently, individuals with cognitive limitations will disregard symptoms or demonstrate a lack of understanding of conditions that are asymptomatic, such as hypertension. Many patients who have memory impairments simply forget about the appointment or fail to remember to schedule transportation.

Cashman, et al. (2004) has cited that the patient’s psychological health status is associated with the number of missed medical appointments. Depression, anxiety attacks and addiction have been noted as key indicators of poor attendance. Individuals who display dismissing or fearful attachments demonstrate a high rate of missed medical appointments (Ciechanowski, 2006). One might fear the outcome of an appointment or
the anticipated physical discomfort that might be associated with the visit. Multiple factors can contribute to a patient’s attendance record. Several characteristics have been associated with the patient’s rate of missed appointments yet key indicators are difficult to isolate.

**Methods utilized to reduce cancellations and no shows**

The healthcare industry has implemented various methods and policies to reduce patient cancellation and no shows rates. A spectrum of medical practices have utilized patient education, reminder systems, financial sanctions, and scheduling models to address the challenge to reducing the rate of missed appointments. A significant portion of the research focuses on scheduling methods utilized to reduce the rate of missed medical appointments. However, the literature does support the uses of various practice strategies that have been individualized to meet the demands of various treatment settings.

**Patient education**

Patient education methods have been implemented to reduce the rate of missed appointments (Johnson, 2007). The education of patients regarding the benefits and consequences of not attending treatment is cited as a method to reduce the rate of cancellations and no shows. The amount of time healthcare professionals invest in patient education has been associated with the patient’s rate of medical compliance (Lyon & Reeves, 2005, p. 33). By providing patients with personalized information regarding one’s medical condition and benefits of treatment, and outlining individualized goals, healthcare providers enhance the patient’s senses of self control. DeSort, a physical
therapist and an assistant director of rehabilitative services in Illinois, reports “It is imperative that each time a patient visits, they’re better educated then the time before” (Stephens, 2005). Patients who understand the connection between medical compliance and personalized goals are able to make informed decisions regarding ones health status.

One strategies used with patient education is an exit interview following the initial evaluation of the patient (Guse, et al, 2003). An exit interview was conducted following the first clinic visit. Following the patient’s appointment, one attended an individualized interview conducted by social work, nursing, or medical students. During the interview, a visit debriefing was conducted and clinic procedures where introduced. The results of this study demonstrated a significant reduction in cancellation and no show rates of individuals who attended the exit interview. The authors suggest that education and personal attention enhance patient medical compliance (Guse, et al, 2003).

**Reminder Systems**

Medical facilities have invested time and resources into the creation of reminder systems. Often patients will receive a reminder phone call or letter by mail prior to one’s appointment. A study conducted by Roberts, et al (2007) investigated the uses of reminder phone calls to notify patients of upcoming respiratory outpatient clinic appointments. The results of this study demonstrated a 15% improved attendance rate of individuals who were able to be contacted regarding future appointments. The primary limitation of the phone-based reminder system is that often individuals are unable to be reached prior to ones medical appointment. Approximately 50% of the individuals in the phone call reminder group were unable to be contacted during the study. However, the
utilization of reminder systems is successful in reducing the rate of missed appointments, if the patients are able to be contacted.

Financial Sanctions

In an effort to reduce the rate of missed medical appointments some health practices have implemented policies in which the patient is charged a fee for failing to attend medical appointments. Chariatte, et al. (2007) reported that a University hospital in Switzerland implemented a hospital policy that patients were to be charged for unexcused missed appointments at the outpatient clinic. The results of the study indicated that the policy to charge for missed appointments that had not been canceled had no significant affect on the rate of missed appointments. The authors did note that the rate of missed appointments had remained stable while the rate of canceled appointments had increased. Due to the limited amount of research it is unclear whether financial sanctions have a role in the effort to minimize cancellations and no shows rates in the healthcare arena, or if they simply create more cancellations.

Scheduling Model

There are three main scheduling models, employed by doctor’s offices and other healthcare systems including the traditional, carve out, and open access. In an effort to reduce the rate of patient missed appointments, healthcare practices have revitalized the traditional scheduling system. In the desire to reduce the rate of missed medical appointments, several healthcare facilities have distanced themselves from the traditional scheduling model and implemented a form of open accesses scheduling.
Traditional Scheduling Model. This model allows healthcare providers to see an optimal number of patients within a scheduled workday. Scheduling varies by specialty, facility, staffing, and workload. Generally the following procedures occur:

1. The patient requests an appointment.
2. The healthcare facility collects the information regarding the visit:
3. The patient is assigned a date and time for the appointment, according to the urgency of the visit, availability of provider, and the patient’s status.
4. The healthcare facility sends appointment reminders.
5. The patient is seen by the health care provider.

The traditional model has patients booked on the physicians schedule in advance. When the physician starts his/her day, ideally 100% of his day is booked (Murray & Tantau, 2000). If a patient calls with an urgent need, the staff might have the physician double booked. Double booking is a method within the traditional model that compensates for the inefficiencies of the traditional scheduling system. More than one patient is intentionally assigned to specific time slots throughout the day. This is in an attempt to cover for missed or cancelled appointments. Double booking can help in the recovery of lost time and expenses; however, it also causes extended waiting periods for patients, added faculty pressure, and inevitable use of overtime (Rohleder & Klassen, 2002).

When individuals fail to show for appointments, there is little that the office can do when utilizing a traditional scheduling model. The time slot could be filled with an urgent care patient. However, walk-ins are discouraged, so the slot often remains empty.
which leads to a loss of revenue for the office. With a high percentage of no shows appointments, financial viability may be compromised.

Carve out model. The carve out model has been implemented in some practices to minimize the limitations of the traditional model. The practice identifies a percentage of appointment slots that can only be booked for urgent care on the day the patient calls. The limitations to the carve out model is it has decreased capacity. If a patient calls with a non-urgent need, he or she has to be assigned to the time slots that have been identified as traditional appointments. This can often result in the patient being exposed to decreased access and long waits (Murray & Tantau, 2000). It is costly to the clinic to carve out 25% of its available appointments for urgent care and that time is not productive do to poor management of daily schedules. The carve out model often results in schedulers booking over urgent appointments in order to meet the need of a patient who are unable to fit into the tradition slot.

Open access scheduling. This model is also known as advance access and same day scheduling. The open access model was created by Murray and Tantau in the early 1990’s. The foundation of the system was founded on one concept to complete today’s work that day (Murray, 2000). At the start of the day, 65% of one’s appointment slots are open and the remaining 35% are booked. The booked slots are composed of individuals who where unable to make it in on the previous day for an appointments. They are not booked weeks in advance. When a patient contacts the physician’s office to schedule an appointment, he or she is offered an appointment that day regardless of the appointment type.
Since the creation of open access model, several primary and specialty clinics in the USA have implemented it. Johnson, et al (2007) identified multiple benefits to utilizing the open access model. It has been noted that patient-physician matches steadily increased following the implementation of the open access system. When patients have access to the primary physician it results in a more robust patient visit. Physicians are encouraged to anticipate and meet the needs of the patient at all visits. This strategy results in a reduction of postponed care. The model eliminates the time required by a non primary physician to review the medical history and establish a relationship with the patient. Clinics have demonstrated increased revenue after implementing this model.

Primary care physicians demonstrated an increase of 12% in charges (Johnson, 2007). Data has indicated that the open access model has decreased the use of urgent-care services. Increased access to one’s primary physician has resulted in a reduction in utilization of urgent care facilities, resulting in increased patient satisfaction and decreased waste of critical resources. They reported, “Patients at the pilot sites (utilizing open access model) were more likely to identify their primary care physician, to rate their physician’s knowledge of their medical history as excellent, to rate the amount of time their physician spent with them as excellent, and to say they could get an appointment when they wanted one” (Johnson, 2007). Open access is a unique way to confront the barriers of scheduling.

Critics of the open access scheduling model have noted that this system might be difficult for certain populations to utilize. Cherniack, et al (2007), examined the impact of the open access on the elderly population. This study indicated that 19% of the
individuals who were classified as elderly failed to schedule follow up appointments as instructed. The open access model requires individuals to take initiative to schedule appointments, a task that might be difficult to accomplish for individuals with cognitive limitations. Individuals who are less educated might be less likely to schedule critical follow-up appointments for asymptomatic health conditions.

Often, when the concept of an open access scheduling system is introduced, it is met with resistance from the healthcare staff. Healthcare workers fear that the implementation of an open access model will result in the clinic being overburdened by patients (Murray, 2003). Without the support of the healthcare staff, it is difficult to transition from a traditional or carve out model to an open access model. A reliable office staff is needed to manage the phones and study trend, it can become overwhelming to the staff. One clinic reported, that amount of phone calls coming in could not be managed. Additional sites that have implemented this scheduling system have reported difficulty working with the backlog of appointments.

**Implementation of multiple strategies**

Johnson, et al. (2007), identified practice strategies utilized by medical practices that have achieved a no show rates that is less then or equal to 10%. They found that the exemplary family medicine practices have implemented a combination of strategies to achieve a low rate of missed appointments to include education methods, reminder systems, sanctions, and open access scheduling. The practices investigated in this study demonstrated a commitment to the reduction of cancellations and no shows. It is critical that the staff and administration are dedicated to reducing the practice’s rate of missed
appointments. The finding suggested that a single best practice strategy or combination of strategies were not identifiable to minimize cancellations and no shows. When choosing a strategy to lower the cancellation and no show rate of a practice, it was critical to consider the patient population, the clinic’s support system, and employee motivation. Research trends have demonstrated that one strategy dose not fit all practice settings.

Summary

In conclusion, the literature suggests that it is difficult to determine what characteristics are associated with poor medical attendance. Multiple strategies, including education methods, reminder systems, sanctions, and scheduling models have been implemented to minimize cancellations and no shows. The methods utilized by therapist at Dodd Outpatient Rehab to reduce cancellations and no shows are individualized. The practice strategies implemented have not been scripted by the department. However, all staff therapist at Dodd Outpatient Rehab are required to ensure that the no show policy has been signed by the patient at the start of the evaluation processes. It is unclear at this point what key education methods the therapists utilize to communicate to the patients. Currently Dodd Outpatient Rehab has no policy outlining key practice strategies to minimize the rate of patient missed appointments.

Studies have demonstrated that the solution to managing attendance rate is dependent on individualized practice elements. When introducing strategies to manage medical compliance, it is essential to ensure that the staff is motivated to participate. If the healthcare staff is not invested in the mission, it is difficult to achieve success.
Literature agrees that the goal to reduce the rate of missed appointments at healthcare facilities is important. Only one article, Stephens, (2005) investigated practices methods utilized by physical therapy clinics to reduce cancellations and no shows. The remaining studies focuses on patient attendance rates related to physician appointments. Research that focuses on attendance rates of individuals who attended multiple discipline rehabilitation therapy appointments is limited. The unique characteristics of Dodd Outpatient Rehab require a tailored solution.
CHAPTER 3

Research Approach

Introduction

The intent of this study is to identify the best practice methods utilized by therapists at Dodd Outpatient Rehab in order to effectively reduce cancellation and no show rates of patients. Once the best practice methods have been identified, the intervention group will implement the strategies in an exit interview following the initial evaluation of the patients. The recommendations from the study will provide therapists with methods to minimize the rate of missed appointments by patients who are scheduled for treatment at Dodd Outpatient Rehab.

Research Design

This study will utilize a randomized, pretest-posttest control group design. A best practice Survey (Appendix C) will be utilized to guide the focus of the intervention group. Data will be collected via existing monthly stat sheets.

Procedures

Therapists at Dodd Outpatient Rehab who consent to participate in this research will be asked to take a Best Practice Survey (Appendix C). Surveys completed by therapist who have historically displayed an average cancellation and no show rate less then or equal to 19% will be compared with therapist who have displayed an average rate
greater than 19%. Therapists, who have historically achieved a cancellation and no show rate of 19% or less, represent the top one third of the staff.

Approximately half of the subjects participating in the study will be assigned randomly by cost center to the intervention group and the remaining subjects the control group. Based on the results of the Best Practice Survey, a one hour class will be developed. The classes will summarize the best practice techniques for reducing cancellations and no show rates of the department’s patients. Members of the intervention group will attend the one hour class and will be introduced to the concept of initial exit interviews. The members of the intervention group will be asked to incorporate the strategies introduced in the class into their treatment protocol. The therapists in the control group receive no intervention. Participants in the study will be asked to not discuss the study with coworkers. All therapists will continue to monitor their cancellation and no show rates, and regularly submit their results on the monthly stats sheet that is currently being utilized in the department. Two months after the conclusion of the class, all stats sheets will be collected and compared in order to determine whether or not the intervention method made a significant impact on the amount of missed appointments by patients.

Hypotheses

Research Hypothesis I: The scores on the best practice survey will differ between therapists with an average cancellation and no show rate of ≤19% compared with therapists with >19%.
Independent Variables I: Two therapy groups will serve as the independent variable, therapists with cancellation and no show rates of ≤19% and therapists with cancellation and no show rates >19%.

Dependent Variables I: Scores on the best practice survey

Research Hypothesis II: The mean rate of patient cancellations and no shows of each therapist who utilize best practice strategies will differ from the mean rate of cancellations and no shows of therapist who do not incorporate best practice strategies.

Independent Variables II: Two therapy groups will serve as the independent variable, therapists who utilize best practice strategies and therapists who do not utilize best practice strategies

Dependent Variables II: Rate of cancellations and no shows

Subject Selection

Staff therapists at Dodd Outpatient Rehab will represent the potential participant pool. Currently, the total therapy staff of twenty-six at Dodd Outpatient Rehab is composed of ten occupational therapists, thirteen physical therapists and three speech and language pathologists. The management team is in the process of hiring two additional physical therapists. Initially, staff therapists will be contacted by an email in which they will be informed of the study and invited to participate. At the following staff meeting, the principal investigator will give a presentation in order to educate the staff about the study. The staff will be informed that although participation is greatly appreciated, those who choose not to participate will not be penalized in any manner. In the event that there
is a shortage of staff therapists who agree to participate, the principal investigator will then make a second invitation to therapists on an individual basis. The study is non-exclusive and every staff therapist at Dodd Outpatient Rehabilitation will be given the opportunity to participate in the study if they so choose.

**Instrumentation**

A Best Practice Survey (Appendix 3) was developed by the principal investigator in order to identify the practices that therapists at Dodd Outpatient Rehab use to encourage patient attendance. The principle investigator utilized the literature review, personal experience and collaboration with advisors to create the survey. This survey is designed to investigate the attendance policy and education practices used by therapists, and address therapist motivation. The survey will be piloted by three therapists who work in various outpatient rehabilitation centers, to ensure clarity.

Currently, therapists at Dodd Outpatient Rehab complete a monthly stats sheet (Appendix 4) that is designed to track the number of patients who attend treatment, cancel an appointment, or fail to cancel or attend an appointment thus resulting in a no-show. The monthly stats sheet also tracks the number of evaluations that are scheduled in a day and successfully attended. Throughout the study, all subjects who participate in this investigation will continue to turn in monthly stat sheets to his or her team leader.

**Data and Statistical Analysis**

Two research questions were developed to address the purpose of the study. The analysis will be described for each research question.
RQ1. The first research question will examine the difference between therapists who historically have displayed a cancellation and no-show rate of ≤19% compared with therapists with >19% on a best practice survey. An analysis of variance (ANOVA) will be calculated between the total scores of the two groups. Degrees of freedom, observed value, and significance levels of the data will be presented.

RQ2. The second research question will examine the difference between therapists who incorporate best practice strategies into treatment protocols and therapists who receive no intervention. An analysis of variance (ANOVA) will be calculated between the total scores of the two groups. Degrees of freedom, observed value, and significance levels of the data will be presented.
CHAPTER 4

Introduction

In recent years, the healthcare system has demonstrated significant difficulty in minimizing patient cancellations and no show rates. Missed medical appointments have resulted in decreased clinician satisfaction, poor utilization of limited resources, reduced profit margins and poor patient outcomes. Dodd Outpatient Rehabilitation Services at The Ohio State University Medicinal Center has displayed a 21% combined cancellation/no show rate from December 2007 through September 2008. This high rate of missed therapy appointments has resulted in a significant loss in revenue for the department and has diminished the staff’s ability to optimize therapeutic outcomes since they cannot manage their patient-care schedules effectively. The goal of this study was to identify the best practice strategies utilized by staff therapists at Dodd Outpatient Rehabilitation that would minimize cancellation and no shows within the department, to outline recommendations that decrease the incidence of missed appointments, and to investigate the impact of exit interviews that incorporate best practice strategies which will reduce cancellation and no show rates.
**Literature review**

**Non Attendance**

Prior research has explored the characteristics of individuals who tend to miss medical appointments and the various methods that have been implemented by medical facilities to reduce the rate of non-attendance. Physician appointments have been the focus of the literature, in discussing methods that minimize the rate of missed appointments. The literature supported a relationship between demographic factors and non attendance. Various studies have explored the relationship of missed medical appointments with patient satisfaction, wait time for appointments, transportation limitations, and patient perceptions. Cashman, et al (2004) indicates that younger adults, women, and individuals of low economic status are at higher risk of no showing for appointments. Some individuals miss healthcare appointments due to emotional and cognitive limitations. A study conducted by Mackin and Arean (2006) claims that individuals who have memory impairments and depression are more likely not to attend medical appointments, and depression screen to predict which patients will display poor attendance. Cashman, et al. (2004) has citied that the patient’s psychological health status is associated with the number of missed medical appointments. Depression, anxiety attacks and addictions have been noted as key indicators of poor attendance. Individuals who display dismissing or fearful attachments have demonstrated a high rate of missed medical appointments (Ciechanowski, 2006). Several characteristics have been
associated with the patient’s rate of missed appointments yet key indicators are difficult to isolate.

**Methods utilized to reduce rate of missed medical appointments**

The healthcare industry has implemented various methods and policies to reduce patient rate of missed appointments. In the desire to reduce the rate of missed medical appointments, several healthcare facilities have distanced themselves from the traditional scheduling model and implemented a form of open accesses scheduling. Open access scheduling is also known as “advance access” and “same day scheduling”. Since the creation of open access model, several primary and specialty clinics in the USA have implemented it. Clinics have demonstrated increased revenue after implementing this model. Primary care physicians demonstrated an increase of 12% in charges (Johnson, 2007).

Medical facilities have invested time and resources into the creation of reminder systems. A study conducted by Roberts, et al (2007) investigated the uses of reminder phone calls to notify patients of upcoming appointments. The results of this study demonstrated a 15% improved attendance rate of individuals who were able to be contacted regarding future appointments. In an effort to reduce the rate of missed medical appointments some health practices have implemented policies in which the patient is charged a fee for failing to attend medical appointments. Chariatte, et al. (2007) reported that a University hospital in Switzerland implemented a policy that patients were to be charged for unexcused missed appointments. The results of the study
indicated that the policy to charge for missed appointments that were not canceled had no significant affect of the rate of missed appointments, but instead the rate of canceled appointments had increased.

Patient education methods have been implemented to reduce the rate of missed appointments (Johnson, 2007). The amount of time healthcare professionals invest in patient education has been associated with the patient’s rate of medical compliance (Lyon, Reeves, 2005). One strategies used with patient education is an exit interview following the initial evaluation of the patient (Guse, et al. 2003). An exit interview was conducted following the first clinic visit. Following the patient’s appointment, one attended an individualized interview, were a visit debriefing was conducted and clinic procedures where introduced. The authors suggest that education and personal attention enhance patient medical compliance.

Johnson, et al. (2007), identified practice strategies utilized by medical practices that have achieved a no show rates that is less than or equal to 10%. They found that the exemplary family medicine practices have implemented a combination of strategies to achieve a low rate of missed appointments to include education methods, reminder systems, sanctions, and open access scheduling. The practices investigated in this study demonstrated a commitment to reduction of cancellations and no shows. The findings suggested that a single best practice strategy or combination of strategies were not identifiable to minimize the rate of missed appointments. Research trends have demonstrated that one strategy does not fit all practice settings.
Methods

The study utilized a randomized, pretest/posttest control group design and was carried out from September 2009 through December 2009 at Dodd Outpatient Rehabilitation at The Ohio State University Medical Center.

Purpose and objectives

The first objective of this study was to identify the best practice methods utilized by therapist at Dodd Outpatient Rehabilitation in order to effectively reduce cancellation and no show rates of patients. The second objective of the study was to determine if therapist who implemented best practice educational strategies introduced in a one hour in-service would display a low rate of missed therapy appointments when compared to therapist who have not implemented the strategies.

Setting

This study took place at The Ohio State University Medical Center, in the department of Dodd Outpatient Rehabilitation. The facility is a comprehensive rehabilitation setting that is composed of occupational therapists, physical therapists, and speech language pathologists. A variety of specialty programs are provided to address the client’s individualized needs.
**Participation**

Staff therapists at Dodd Outpatient Rehabilitation represented the participant pool. At the start of the study the therapy staff at Dodd Outpatient Rehabilitation was composed of twenty-seven therapists including, ten occupational therapists, fourteen physical therapists, and three speech therapists. The study was non-exclusive and every staff therapist at Dodd Outpatient Rehabilitation was given the opportunity to participate in the study if they choose.

**Instruments**

A Best Practice Survey (BPS) was developed by the investigating team. The survey instrument was designed to identify the practices that therapists used to encourage patient attendance. The BPS had twenty-three items. Responses were rated using a seven point, forced choice scale, ranging from strongly disagree to strongly agree. Six subscales were developed. The survey investigated the utilization of the attendance policy, education practices used by therapists, clarifying questions, scheduling procedures, barriers to attendance, and therapist motivation to reduce the rate of missed appointments. The team that developed the survey was composed of a master student, who was employed as an occupational therapist at Dodd Outpatient Rehabilitation, a professor of behavioral psychology, and a professor of evaluation and measure. The investigating team utilized a literature review, personal experiences, and collaboration to develop the survey. It was piloted by three therapists who work in various outpatient rehabilitation centers, to ensure clarity and content. Questions for the EBS are reported in Table 1.
<table>
<thead>
<tr>
<th>Questions</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td>I verbally review the attendance policy with the patients during the initial evaluation.</td>
</tr>
<tr>
<td>Question 2</td>
<td>At the initial visit, I explain the rationale behind the attendance policy to the patient.</td>
</tr>
<tr>
<td>Question 3</td>
<td>At the end of the evaluation, I explain the consequences of not attending therapy as recommended.</td>
</tr>
<tr>
<td>Question 4</td>
<td>I review with the patient the benefits of attending therapy as prescribed at the initial visit.</td>
</tr>
<tr>
<td>Question 5</td>
<td>At the end of the evaluation, I review my plan of care and outline what I expect to accomplish at the next appointment.</td>
</tr>
<tr>
<td>Question 6</td>
<td>I end the evaluation process by asking the patient “Did we address everything you expected to review today?”</td>
</tr>
<tr>
<td>Question 7</td>
<td>At the end of the evaluation, I ask the patient “Is there anything else you hoped to gain from this visit?”</td>
</tr>
<tr>
<td>Question 8</td>
<td>At the beginning of the evaluation I ask the patient what he or she expects to accomplish in therapy.</td>
</tr>
<tr>
<td>Question 9</td>
<td>I express to the patient at the termination of the initial evaluation that I welcome questions.</td>
</tr>
</tbody>
</table>

Continued
Table 1 Continued

Question 10  At the end of the evaluation, I schedule one or two new appointments.

Question 11  At the end of the evaluation, I schedule three or four additional appointments.

Question 12  At the end of the evaluation, I schedule five or more additional appointments with the patient.

Question 13  At the end of the evaluation, I ask the patient if he or she suspects any difficulty attending future appointments.

Question 14  At the end of the evaluation, I ask the patient if he or she has any transportation barriers to attending future appointments.

Question 15  Therapists are rewarded for maintaining a high level of productivity.

Question 16  When a patient cancels an appointment, I feel a sense of relief.

Question 17  Cancellations and no show appointments provided me with time to complete non productive work tasks.

Question 18  Therapists are recognized for minimizing cancellations and no shows.

Question 19  I feel that a reduction in cancellations and no shows would decrease my ability to complete paperwork in the desired timeframe.

Question 20  I’m frustrated with the amount of paperwork I’m required to complete during a work day.

Continued
Table 1 Continued

Question 21  I have no difficulty completing work related task in a typical work day.

Question 22  I feel that my actions affect patient cancellations.

Question 23  I was adequately trained to minimize cancellations.

Ethical approval

The Ohio State University Institutional Review Board approved this study. Several potential risks were identified. Therapists may be at risk for psychological distress regarding individual performance. Therapists might be apprehensive regarding how the results of the study will impact one’s work routine. A therapist may feel his or her reputation is associated with one’s performance during the study. Since the principal investigator is a staff member at Dodd Outpatient Rehabilitation, therapists might feel social pressure to participate in the study. To safeguard against such risk the subject participant pool was educated regarding the risks and benefits of the study, prior to signing the consent form. The data was blinded to ensure confidentiality.

Procedures

The individuals who participated in the study were divided into two groups. The first group was composed of therapists with an average cancellation and no show rate less than or equal to 19%. The second group was composed of therapists with an average cancellation and no show rate greater than 19%. Each group completed the Best Practice Survey.
One month following the completion of the survey, approximately half of the subjects participating in the study were randomly assigned to the intervention group and the remaining subjects were assigned to the control group. The intervention group attended a one hour in-service that outlined recommendations regarding the utilization of an exit interview. The objectives of the in-service were to optimize therapist’s knowledge regarding the impact of missed appointments, to increase awareness of research regarding methods to minimize the rate of missed medical appointments, to identify client populations who have displayed high rates of missed medical appointments, and to outline recommendations that will decrease the incidence of missed therapy appointments. Therapists who attended the in-service were instructed to utilize the last five minutes of the treatment to complete an exit interview. Therapists were encouraged to review the attendance policy and the procedures to cancel an appointment, to emphasize to their patients the benefits of attending and not attending treatment, to educate the patient regarding what the expectations for the next visit, to ask patients to clarify the time of their next visit, and to provide the patient with the opportunity to respond to questions by presenting a question. Members of the intervention group were instructed to utilize the strategies reviewed in the in-service when working with their patients from the start of November 2009 through December 2009. Data was collected from department records. Then, the statistics sheets for the control and treatment groups were compared to determine whether or not the intervention made a significant impact on the patient’s non-attendance rate. The investigator was blinded to the data collection process.
Data and statistical analysis

The first research question examined the difference in responses on the best practice survey between therapists who had historically displayed a cancellation and no show rates greater than 19% compared with therapists with less than or equal to 19% cancellation and no-rates. The second research question examined the difference in the rate of missed appointments between therapists who incorporate best practice strategies into treatment protocols and the therapists who received no intervention. Missed medical appointments were the dependent variable for research question two and were defined as appointments that were missed due to a no show or a cancellation.

Cronbach’s alpha was used as a measure the internal consistency or score reliability of the test scores on the Best Practice Survey for the sample of rehabilitation professionals. T-tests and one-way analysis of variances (ANOVA) were utilized to assess the differences between two or more group means in both research questions. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) Version 17.0.

Results

Characteristics of subjects

Of the twenty-seven staff therapists at Dodd Outpatient Rehab, 100% who were eligible participated in the study except for the staff member who was the principal investigator of the study. Twenty-six therapists completed the initial best practice survey.
One additional therapist joined the staff in October 2009 and participated in the second phase of the study. One therapist from the intervention group was unable to complete the study due to illness. The majority of the participants were physical therapist, who represented 58% of the subjects. Occupational therapists represent 31% of the participant pool and speech therapists represent the remaining 11%. The participant pool was composed of three cost centers. The largest cost center 9303 represents 46% of the participate pool and was composed of therapists who primarily treat individuals with neurological conditions. Physical therapists who treated individuals with orthopedic conditions represented the second cost center 9302 or 42% of the participation pool. The remaining cost center 9305 was composed of occupational therapist who treated individuals for a variety of hand and upper extremity conditions. This third cost center represented 12% of the participant pool.

**Best practice survey**

The best practice survey utilized a seven point scale, where 1 representing never and 7 representing always. The surveys were divided into three groups. Group one, which had five participants, represented the therapists who traditionally displayed a cancellation/no show rate equal to or less than 19%. Group two, which had sixteen participants, represented therapists who displayed a cancellation/no show rate greater than 19%. Group three was composed of new employees and had five participants.

The Cronbach’s alpha for the total Evidenced Based Survey (EBS) was .512. The first subscale, utilizing the attendance policy, had a Cronbach’s alpha of .966. The second
The third subscale, applying education practices used by therapists, had a Cronbach’s alpha of .513. The fourth subscale, using clarifying questions, had a Cronbach’s alpha of .700. The fifth subscale, implementing scheduling procedures, had a Cronbach’s alpha of .757. The fifth subscale, barriers to attendance, had a Cronbach’s alpha of .875. The sixth subscale, therapist motivation, had a Cronbach’s alpha of .394.

Table 2 provides the means and standard deviations for each question on the EBS. The first two questions on the survey addressed therapist utilization of the attendance policy and both groups reported that on the average they rarely addressed the attendance policy with patients during the evaluation process. Item three on the survey identified the consequences of not attending therapy and on the average both groups reported that they rarely or sometimes review this policy. Questions ten through twelve determined how many follow up appointments are typically scheduled following an evaluation and on the average the was no significant difference in the number of appointments the therapist schedules following an initial evaluation. Question thirteen and fourteen investigated how often therapist explore barriers that may impact the patient’s ability to attend future appointments. Group one, composed of the therapists with a low rate of missed appointments, often explored barriers and group two with a higher rate of missed appointments sometimes explored barriers. The final group of questions fifteen through twenty-three, explored therapist motivation to reduce cancellation/no-show rates. Group one indicated that they are very rarely rewarded to maintain a high level of productivity unlike group two that indicated that they were rarely rewarded. Group one indicated that they somewhat disagree with the following statement, “I feel a sense of relief when a
patient cancels an appointment, but group two indicated that they were unsure how they felt about the statement. Therapist in group one indicated that they agreed that missed appointments provided them with time to complete non productive work and group two somewhat agreed. Therapists in both groups indicated that they agree and somewhat agree that they are frustrated with the amount of paperwork they are required to complete. Individuals in group one somewhat feel that their actions affect patient cancellations and group two indicated that they are unsure if their actions affect patient cancellations. Both groups indicated they somewhat disagreed that they were adequately trained to minimize cancellations.

Table 2 Best Practice Survey Results

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
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<tr>
<td></td>
<td>(≤19%)</td>
<td>(&gt;19%)</td>
</tr>
<tr>
<td><strong>Attendance</strong></td>
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<tr>
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<td>Mean</td>
<td>SD</td>
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<td>Question 1</td>
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Continued
Table 2 continued

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<th>Question 2:</th>
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**Education**

Table 2 continued

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**Clarifying Question**

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<td>Question 9:</td>
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**Follow up Scheduling**

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<th>.295</th>
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Continued
Table 2 Continued

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<th>-2.91</th>
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*Explores barriers to attendance*

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<td>4.38</td>
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*Therapist Motivation*

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<th>1.10</th>
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<td>1.25</td>
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<tr>
<td>Question</td>
<td>2.40</td>
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<td>-0.55</td>
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<td>.432</td>
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<tr>
<td>Question</td>
<td>5.00</td>
<td>1.41</td>
<td>4.38</td>
<td>1.20</td>
<td>0.65</td>
<td>19</td>
<td>.087</td>
</tr>
<tr>
<td>Question</td>
<td>6.00</td>
<td>1.00</td>
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<td>1.54</td>
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<td>3.56</td>
<td>1.79</td>
<td>0.26</td>
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<td>.879</td>
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</table>

| Total Score | 104.80 | 8.39 | 107.86 | 13.03 | -0.49 | 19 | .235 |
The scores on the EBS were compared between groups one and two to identify significant differences. Table two provided the results. Only the scores of two questions were significantly different between the two groups with low and high cancellation rates. Question five identified how often therapists outlined expectations for the patient’s future appointment. Group one indicated that they outlined future expectations on an often basis while group two outlined future expectations very often. Question seventeen investigated therapist perceptions regarding the benefits of missed therapy appointments. Group one indicated that they agree with the following statement, “Cancellations and no shows appointments provided me with time to complete non productive work task” where group two somewhat agreed with this statement.

Questions four, eleven, twelve, and nineteen trended towards a significant difference between group’s scores on the EBS. Therapist’s level of motivation was not significantly different between the groups, but group responses trended in the same direction. Question eighteen indicated that both groups reported that they are not recognized for minimizing cancellations and no shows. In question 15, therapist reported that they have difficulty completing work related task in a typical work day and that they were not adequately trained to minimize cancellations. Therapists in group one somewhat agreed that their actions effected patient cancellations but therapists in group two indicated that they were unsure if their actions effected patient cancellations.
Implementation of exit interviews

All study participants were divided into two groups, the intervention group and the control group. The intervention group had four occupational therapists, six physical therapists, and two speech therapists. Four therapists in this group were employed in the orthopedic cost center (9302), seven in the neurological cost center (9303), and one in the hand and upper extremity cost center (9305). The control group was composed of four occupational therapists, nine physical therapists and one speech therapist. Seven of the therapists in this group were employed in the 9302 cost center, five in the 9303 cost center, and two in the 9305 cost center. Two occupational therapist from cost center 9305 were unable to participate in the study. The first was randomly assigned to the intervention group but was unable to participate due to a prolong illness. The second therapist was the principal investigator and therefore her data were not included in the study.

As indicated in Table 2, there were no significant differences between the intervention group’s rate of missed appointments and the control group’s rate of missed appointments. Therefore, the mean rate of patient’s cancellations and no show of each therapist who utilize best practice strategies did not significantly differ from the mean rate of cancellations and no shows of therapist who do not incorporate best practice strategies.
Table 3

Group differences between the intervention and control groups rate of missed therapy appointments

<table>
<thead>
<tr>
<th></th>
<th>Intervention group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>November 2009</td>
<td>19.73</td>
<td>4.80</td>
</tr>
<tr>
<td>December 2009</td>
<td>23.39</td>
<td>5.59</td>
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</table>

When the participants of the study were stratified by cost center, 9302 or 9303, significant differences in the rate of missed appointments were found. Table 3 reported the cancellation rates by cost center. The average November rate of missed appointments was significantly higher for cost center 9302 when compared to cost center 9303.

Table 4

Cancellation rates by cost center

<table>
<thead>
<tr>
<th></th>
<th>9302</th>
<th>9303</th>
<th>9305</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>November</td>
<td>24.29</td>
<td>5.04</td>
<td>18.15</td>
</tr>
<tr>
<td>December</td>
<td>24.45</td>
<td>5.42</td>
<td>22.57</td>
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</table>
Table 4 reported the cancellations by professional discipline. In the month of November 2009, occupational therapists displayed the lowest average rate of missed appointments (17.73%), followed by speech therapists (20.27%), and physical therapists (22.71%). When comparing the rate of missed appointments between occupational therapists and physical therapist in November 2009, trend in significant differences was found ($p = .091$).

Table 5

<table>
<thead>
<tr>
<th></th>
<th>OT</th>
<th>PT</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>November</td>
<td>17.73</td>
<td>22.71</td>
<td>20.27</td>
</tr>
<tr>
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<tr>
<td>December</td>
<td>22.35</td>
<td>23.55</td>
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Discussion

The first purpose of the study was to determine if the scores on the best practice survey would differ between therapist with an average cancellation and no show rate of
less than or equal to 19% compared with therapist with greater than 19%. The overall results of the survey displayed no difference between the two groups, although two questions (5, 17) displayed significant differences. When exploring the utilization of the attendance policy, education methods, scheduling rates, and therapist motivation, there were no significant difference between the groups. In future research it would be beneficial to explore the methods that each therapist utilizes to establish a therapeutic rapport with his or her patients to determine if this may be a factor associated with patient attendance rates. Therapeutic uses of self may be a significant variable that the BPS did not explore.

The second purpose of the study was to determine if the implementation of an exit interview that incorporated best practice strategies following the initial evaluation would reduce cancellation and no show rates in outpatient rehabilitation settings. The results of the study indicate that the implementation of exit interviews did not reduce the therapist rate of missed medical appointments. This was surprising because the literature suggest that the amount of time invested in patient education is associated with the rate of which patient’s miss medical appointments (Lyon, Reeves, 2005). The results of a previous study demonstrated a significant reduction in cancellation and no show rates of individuals who attended the exit interview (Guse, et al, 2003). Since the total score reliability of the BPS was low (α = .513), it may not be sensitive enough to identify a difference if they existed.

Results of the study display a relationship between the therapists rate of missed appointments by cost center. Cost center 9303, which is composed of therapist who treat
individuals with neurological conditions had a significantly lower rate of missed appointments when compared with cost center 9302, which is composed of physical therapist whom primary work with individuals who have an orthopedic condition. This suggests that it may be useful to study the difference between the types of patient population and the characteristics of the therapists who treat them. This was unexpected because; literature suggested that individuals who have cognitive limitations are more likely not to attend a medical appointment (Mackin, Arean, 2006). Often individuals who have sustained a neurological conditions such as a traumatic brain injury (TBI) or a cerebral vascular accident, will display cognitive impairments; therefore indicating therapist who primarily treated individuals who have cognitive limitation would display a high rate of missed appointments when compared with individuals who primary treat individuals with no cognitive impairments. Findings reported by Cashman, et al. (2004) suggested that young adults are at a high risk of no showing for appointments. According to the Brain Injury Association of America (2007), historically the incidence of TBI has been highest in the fifth-teen to twenty-four age group; therefore, one may assume that individuals who have a TBI would be a high risk for missing medical appointments.

Limitations and implications for future research

Several limitations were identified. Despite a 100% participation rate, the low number of potential subjects, and increased sample size would increase the power of the test to identify differences if they existed. Another limitation of this study was the data was collected for only two months. Future studies should add participants and collect data over an extended period of frame. Finally, further instrument development should be
done to improve the internal consistency of the test and allow for additional psychometric research.

The cancellation rates changed based on the length of time from the in-service. During the month of November 2009, immediately following the one-hour in-service, the intervention group displayed a mean rate of missed appointments of 19.73%. One month later in December, the cancellation rate increased to 23.39%. The differences from November to December may be a result of decrease utilization of the strategies introduced during the in-service as time passed. It is recommended that future research explore the utilization of education methods to reduce the rate or missed medical appointments utilize intervention strategy over time. Expanding the data collection time also will avoid confounding variables such as end of the year and holiday events.

The results of the best practice survey indicated that therapist had a low rate of motivation to reduce cancellation and no show rates. Therapist indicated that they have difficulty completing non-productive work within the workday and reported a sense of discontent regarding the lack of time provided for this work task. When a therapist has a patient who misses an appointment, an opportunity is provided to complete secondary work tasks. This may suggest that reducing ones rate of missed therapy appointments may result in increased workloads and stress levels so it may be beneficial for management to implement a reward system to enhance individual motivation and to reduce missed therapy appointments.
Conclusion

The study explored education methods that individual therapists could utilize when working with their patients to ensure attendance. The findings suggest that an individual therapist action alone does not significantly minimize cancellation and no show rates. As discussed in the literature review, a multiple strategy approach that is implemented at the management level may be required in addition to individual efforts to significantly reduce the rate of missed appointments in an outpatient rehabilitation setting. Organizational commitment at every level is required to minimize the rate of missed appointments. It is recommended that the management team at outpatient rehabilitation settings explore the utilization of a reward system to enhance therapist motivation to reduce individual’s rate of missed appointments. Increased administrative support may be required to implement a reminder system and stream line documentation to reduce the time that therapist are required to spend on nonproductive work. It may be beneficial for outpatient rehabilitation supervisors to assess the scheduling model currently being utilized and to optimize patient’s ability to receive a desired appointment time. However, effective strategies to reduce cancellations require multiple approaches as outlined in the study.
References


THE OHIO STATE UNIVERSITY MEDICAL CENTER
REHABILITATION SERVICES

TITLE: MISSED APPOINTMENTS

PURPOSE: To establish the Rehabilitation Department's policy in regard to missed appointments.

POLICY: It is the policy of the Rehabilitation Department of The Ohio State University Medical Center to have a procedure for patients that are absent or have a poor attendance record.

DEFINITIONS:

1. Missed Appointments – Appointments that are missed due to a no show or cancellation.
2. No Show – Patients who do not report for treatment and do not provide notice to the Outpatient Rehab Department.
3. Cancelled Appointments - Appointments that are cancelled prior to scheduled treatment time.

PROCEDURE:

1. The patient/family or caregiver reads and signs the Attendance Expectation on the initial visit.
2. If the patient has two consecutive (2) no shows, the patient will be contacted by a member of the outpatient rehab staff to determine reasons for the absences. The patient will be removed from the schedule unless circumstances dictate otherwise.
Appendix B: Therapy Attendance Expectations
Outpatient Rehabilitation @ OSU

Therapy Attendance Expectance

It is the expectation of the therapists at Outpatient Rehabilitation at OSU that you will attend all of your scheduled sessions. Your active participation is necessary to achieve maximum benefit from therapy. We reserve the right to discontinue therapy services and notify your physician after 2 consecutive no-show appointments. This also applies if you do not attend your regularly scheduled therapy sessions. If you need to cancel a scheduled appointment, please provide 24-hour notice, if applicable, to cancel your appointment. Be advised that if you are late for your appointment by 15 minutes or more, your appointment for that day will need to be rescheduled.

☐ I give my permission to leave messages regarding my rehabilitation on my home/office answering system.

The most convenient number that I can be reached in case of scheduling issues is:

Home
Work
Cell

x

Patient Signature

Staff Signature
Appendix C: Evidenced Based Survey
Best Practice to Reduce No Show and Cancellation Rate

Please clearly mark one answer that is most appropriate. Your responses will be confidential and will not be shared with management.

Gender: □ Female □ Male

Years of Experience: □ 1-5 □ 6-10 □ 11-15 □ 16-20 □ 21-30 □ 31 or more

Discipline: □ Occupational Therapy □ Physical Therapy □ Speech Therapy

Primary Area of Practice: □ Orthopedic □ Neurology

1. I verbally review the attendance policy with the patients during the initial evaluation.

□ Never □ Very Rarely □ Rarely □ Sometimes

□ Often □ Very Often □ Always

2. At the initial visit, I explain the rationale behind the attendance policy to the patient.

□ Never □ Very Rarely □ Rarely □ Sometimes

□ Often □ Very Often □ Always

3. At the end of the evaluation, I explain the consequences of not attending therapy as recommended.
4. I review with the patient the benefits of attending therapy as prescribed at the initial visit.

5. At the end of the evaluation, I review my plan of care and outline what I expect to accomplish at the next appointment.

6. I end the evaluation process by asking the patient “Did we address everything you expected to review today?”

7. At the end of the evaluation, I ask the patient “Is there anything else you hoped to gain from this visit?”
8. At the beginning of the evaluation I ask the patient what he or she expects to accomplish in therapy.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes

☐ Often  ☐ Very Often  ☐ Always

9. I express to the patient at the termination of the initial evaluation that I welcome questions.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes

☐ Often  ☐ Very Often  ☐ Always

10. At the end of the evaluation, I schedule one or two new appointments.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes

☐ Often  ☐ Very Often  ☐ Always

11. At the end of the evaluation, I schedule three or four additional appointments.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes

☐ Often  ☐ Very Often  ☐ Always
12. At the end of the evaluation, I schedule five or more additional appointments with the patient.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes  ☐ Often  ☐ Very Often  ☐ Always

13. At the end of the evaluation, I ask the patient if he or she suspects any difficulty attending future appointments.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes  ☐ Often  ☐ Very Often  ☐ Always

14. At the end of the evaluation, I ask the patient if he or she has any transportation barriers to attending future appointments.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes  ☐ Often  ☐ Very Often  ☐ Always

15. Therapists are rewarded for maintaining a high level of productivity.

☐ Never  ☐ Very Rarely  ☐ Rarely  ☐ Sometimes  ☐ Often  ☐ Very Often  ☐ Always

16. When a patient cancels an appointment, I feel a sense of relief.
17. Cancellations and no show appointments provided me with time to complete non productive work tasks.

18. Therapists are recognized for minimizing cancellations and no shows.

19. I feel that a reduction in cancellations and no shows would decrease my ability to complete paperwork in the desired timeframe.

20. I’m frustrated with the amount of paperwork I’m required to complete during a work day.
21. I have no difficulty completing work related task in a typical work day.

22. I feel that my actions affect patient cancellations.

23. I was adequately trained to minimize cancellations.
Appendix D: OSU Outpatient Rehabilitation Existing Stat Sheet
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