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Staff Survey of Non-attendance Factors for Physical Rehabilitation

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Abstract

Since missed client appointments impact both the client and the clinic, rehabilitation administrators need to understand the perceptions of their clinic staff as well as clients. To determine the level of agreement in staff perceptions by staff role, we distributed 150 surveys to staff at 26 local physical rehabilitation clinics. From the 75 surveys returned, we analyzed the responses by 3 staff categories: physical therapist, front desk, and nursing staff. The most critical factors identified by physical therapists and nursing staff were patient attendance history, while by front desk staff it was cost of care. All staff identified form of payment as an important factor. The study suggests that not only should staff perceptions be identified but also delineated by staff role. Future research directions are needed to determine the relationship between staff perceptions according to staff role, client needs, and intervention strategy alignment for physical and vocational rehabilitation programs.

Rehabilitation administrators face pressure to reduce costs and increase measurable outcomes. Affecting the cost and success of rehabilitation is client non-attendance. Because each lost rehabilitation appointment may slow client progress, the cost of non-attendance to the client may include lost income and additional treatment expenses. The cost of missed appointments also impacts the clinic in terms of lost client contact time for the therapist or counselor. The magnitude of the non-attendance problem for physical rehabilitation has been demonstrated in multiple studies. For example, one study found 41% of the clients referred for physical rehabilitation failed to attend appointments while another study reported 46% of clients missed at least one session (Bishop, Meuleman, Robinson, & Light, 2007). Non-attendance, non-completion, or non-referral are also problems in vocational rehabilitation (Bond, Dincin, Setze, & Witheridge, 1984; Cook & Rosenberg, 1994; Douzinas & Carpenter, 1981; Horn, Yoels, & Bartolucci, 2000; O'Brien, 2007; Spense, 2004). Factors that potentially contribute to noncompliance include socioeconomic factors (Boza, Milanes, Slater, Garrigo, & Rivera, 1987), clinic environment (American Health Consultants, 2004), and scheduling convenience (Hackett, Bundred, Hutton, O'Brien, & Stanley, 1993; Hackett et al., 1987).

We identified over 20 studies that sought to explain why clients miss appointments, primarily based on reviews of client record or client interviews. Yet, only a few studies surveyed staff regarding their beliefs about client non-attendance factors. For example, in the healthcare literature, primary care doctors were surveyed using a 5-point Likert scale about whether any of 14 statements explained missed appointments while focus group interviews of 11 physicians, 1 nurse, 10 receptionists, and 7 practice managers provided anecdotal evidence of non-attendance factors. Likewise, another primary care study interviewed physicians, receptionists, and a nurse, and reported anecdotal evidence of tensions between staff and clients over non-attendance but did not compare results between staff roles. Interestingly, as we reviewed the literature to identify non-attendance factors, we found no study that contrasted perceptions among different rehabilitation staff roles regarding client non-attendance.

In this paper, we explore how physical therapy rehabilitation staff rate the factors identified in the literature, whether they agree among different staff roles, and whether they identify any new factors. The long-term goal in conducting this study was to document staff perceptions in order to develop future management research directions toward potential intervention methods to reduce client non-attendance.

Specifically, this paper examines survey responses from front desk, nursing staff, and physical therapists regarding client non-attendance factors. Although we surveyed physical rehabilitation staff, the insights gained may also be helpful for vocational rehabilitation administrators. In the next section, we review previous studies. Then we summarize the methodology for surveying local clinic staff and analyze the data by staff category to reveal interesting differences. We discuss study limitations and conclude with recommendations for rehabilitation administrators and directions for future research.

Background

Throughout this paper, we organized non-attendance factors and themes identified in the literature according to three categories: client, organizational, and external. Client themes include age, gender, socioeconomic factors, and attendance behavior. Organizational themes are controlled directly by the clinic. Examples of organizational themes are scheduling and clinic environment. Extrinsic themes include transportation and form of payment. We identified factors from previous rehabilitation studies as well as general healthcare studies on client compliance with appointment attendance. Factors were aggregated into themes. For example, within the extrinsic category, the transportation theme included mode of travel, location, inability to find transportation, zip code, transportation problems, car access, non-driver, and distance to clinic.

All the rehabilitation studies evaluating client non-attendance in the review for physical rehabilitation considered client themes. Client themes included age , gender , employment , type of care, forgetting, client health, perceptions of care, and attendance behavior. Several studies evaluating client non-attendance for physical rehabilitation also considered organizational features such as cost of care, scheduling , clinic environment, and referral source. A few studies evaluating client non-attendance for phsical rehabilitation also considered extrinsic themes such as transportation, and form of payment.

From the general healthcare literature, additional client themes were identified. These included ethnicity, religion, language (Worcester et al., 2004), socioeconomic (Vikander et al., 1986) and family. An additional extrinsic theme, weather, was also identified.

Complicating the interpretation and comparison of attendance studies were the different characteristics of each study, as summarized in Table 1. Table 1 only includes research studies that evaluate client attendance with respect to various factors. Ten different types of clinics are reported in Table 1 with specialties ranging from cardiac rehabilitation to primary care. The number of sites was most frequently 1 but 7 studies collected data from 2 to 336 sites. Table 1 also indicates whether the data are from a staff survey, a client survey, staff data collection, archival data collection, or a combination of methods. Fifteen studies had less than 500 subjects while the remaining 9 studies had 573 to 22864 subjects. Nineteen studies in Table 1 reported data for a missed percentage; however, the missed percentage was measured in different ways as indicated. Table 1 shows that the percentage of appointments missed ranged from 6.7% to 49.5% while the percentage of clients missing appointments ranged from 22.2% to 64%.

Table 2 lists the factors that were found significant or important in the studies reported in Table 1. If the study included a statistical prediction model for client attendance, then only those factors included in the model were defined as significant. If a study did not use statistics to define

Table 1
Summary of Client Non-attendance Studies by Design Characteristics

Reference	Clinic Type	No. Sites	Data Method	No. Subjects	% Missed
Armistead (1997)	PT	1	AD	2524	AP: 9.2
Bean & Talaga (1995)	MS	1	AD	879	AP: 38.1
Brewer et al. (2000)	PT	1	CS, SD, AD	80	AP: 14
Brookes (1992)	PT	1	SD	123	–
Collins et al. (2003)	NE, OR	3	CS	200	AP: 17, 18, AP: 24[a]
Della Valle, Levitz, & Bora (1995)	OR	2	CS, AD	108	AP: 17, AP: 48[b]
Gleeson et al. (1991)	PT	1	CS, SS	192	AP: 13
Grindely et al. (2008)	OR, PT	1	CS, SD, AD	229	AP: 14
Herrick, Gilhooly, & Geddes (1994)	DN	1	CS	436	–
Hertz & Stamps (1977)	PC	1	AD	3172	AP: 15
Hussain-Gambles et al. (2004)	PC	336	SS	336	–
Lacy et al. (2004)	PC	1	CS	34	–
Lagerlund et al. (2000)	MA	4	CS	949	AP: 16, AP: 22[c]
Lee et al. (2005)	MS	1	AD	22864	AP: 21
Richardson et al. (1964)	PD	1	CS, AD	700	CP: 35
Scheid et al. (1993)	DN	1	AD	134	AP: 49.5
Spikmans et al. (2003)	DB	1	CS, AD, SS	293	CP: 36
Starkenburg et al. (1988)	PC	1	CS, AD	99	CP: 64
Trenouth & Hough (1991)	DN	1	CS	100	–
Vasey (1990)	PT	4	CS, AD	200	CP: 22.2
Vikander et al. (1986)	PC	5	CS	647	CP: 55
Weingarten, Meyer, & Schneid (1997)	PC	1	AD	3962	AP: 6.7
Worcester et al. (2004)	CR	2	CS, AD	573	CP: 47.5
Worsfold et al. (1996)	PT	1	CS, SS	130	CP: 41

Note. Dashes indicate the information was not reported. AP = percentage of appointments. AD = archival data collection. CP = percentage of clients. CR = cardiac rehabilitation. CS = client survey. DN = dentistry. DB = diabetes care. MA= mammography. MS = multi-speciality. NE = neurology. OR = orthopedics. PD = pediatrics. PT = physical therapy. PC = primary care. SD = staff data collection. SS = staff survey. [a]AP: 17% and 18% in the two OR clinics, 24% in the NE clinic. [b]AP: 17% in the private offices, 48% in the hospital clinic. [c]AP: 16% for first appointments, 22% for subsequent appointments.

Table 2
Summary of Significant or Important Themes

Reference	Significant or Important Themes[a]	S or I
Armistead (1997)	Age, gender, referral source, type of care	I
Bean & Talaga (1995)	Age, gender, scheduling, type of care	S
Brewer et al. (2000)	No theme evaluated predicted attendance	S
Brookes (1992)	Age	I
Collins et al. (2003)	Attendance behavior	S
Della Valle et al. (1995)	Form of payment	S
Gleeson et al. (1991)	Forgetting, family, transportation	I
Grindley et al. (2008)	Age, perceptions of care	S
Herrick et al. (1994)	Perceptions of care, scheduling, socioeconomic, transportation	S
Hertz & Stamps (1977)	Age, ethnicity	S
Hussain-Gambles et al. (2004)	Client health, forgetting, perceptions of care	I
Lacy et al. (2004)	Clinic environment, family, perceptions of care, scheduling, transportation	I
Lagerlund et al. (2000)	Clinic environment, cost of care, perceptions of care	S
Lee et al. (2005)	Age, attendance behavior, ethnicity, scheduling, socioeconomic, transportation, type of care	S
Richardson et al. (1964)	Age, perceptions of care, type of care	S
Scheid et al. (1993)	Clinic environment	S
Spikmans et al. (2003)	Client health, ethnicity, perceptions of care	S
Starkenburg et al. (1988)	Age, attendance behavior, client health, employment, ethnicity, scheduling, type of care	S
Trenouth & Hough (1991)	Attendance behavior, employment, forgetting, transportation	I
Vasey (1990)	Scheduling	I
Vikander et al. (1986)	Age, client health, forgetting, referral source, scheduling, transportation, type of care	S
Weingarten et al. (1997)	Age, clinic environment, form of payment	S
Worcester et al. (2004)	Age, client health, employment, gender, transportation, type of care	S
Worsfold et al. (1996)	Type of care	S

Note. S = significant statistically. I = importance qualitatively determined from percentage or number of survey responses, or study authors' self identification. [a]Themes are listed in alphabetical order.

significance, we defined an importance metric that reflects whether the study's authors identified a theme as important. In some cases, the importance metric was based on the study's survey results showing a certain percentage or number of clients or staff reporting a theme believed to be important. In other cases, the importance metric was based on the study's authors self identifying a theme as important. Because these qualitative assessments are subjective, comparisons are challenging. Regardless, Table 2 points out that there has not been agreement on which themes should be targeted to improve attendance.

The previous studies of non-attendance were helpful in developing a list of potential factors. However, the studies in Tables 1 and 2 do not evaluate the same factors under the same conditions or draw the same conclusions about which factors are most important. Furthermore, none of the studies referenced in Tables 1 and 2 focused on rehabilitation staff perspectives by role for client non-attendance. Thus, we developed a three section survey for local physical rehabilitation staff that is described in the next section.

Method

Once we received approval for the survey by our university's Institutional Review Board, we contacted physical rehabilitation clinic administrators. Additional approvals were granted by the Institutional Review Boards of two local hospitals.

Data Collection and Sample

As a part of the survey protocol, the cover page included an informed consent form that explained the survey procedure, the potential risks, and the potential benefits of the survey. The procedure was that either the authors or the clinic administrators handed staff the surveys, each with an attached pre-addressed postage paid envelope. The staff members were instructed to read the informed consent, and if they were willing, to fill out the survey and return by mail in the attached pre-addressed postage paid envelope. The potential risks to the staff were described as no greater than those faced in normal life while the potential benefits were described as insights into factors that affect client attendance and that the results of the study may lead to further investigation between factors and client attendance.

Following IRB approvals, surveys were distributed to 150 employees at 26 local physical therapy clinics. Of the 150 surveys distributed, 76 were returned by mail in the envelopes provided. From the surveys returned, only one was incomplete. The response rate as the ratio of completed surveys to distributed surveys was 50%. Completed surveys were received from 44 physical therapists, 19 front desk staff, and 12 nursing staff.

Survey Instrument

A survey with three sections was developed based on the literature review and discussions with physical rehabilitation staff. A similarly structured survey was piloted by one of the authors in an earlier study of primary care physicians, nursing staff, and front-desk staff to determine why patients miss primary care appointments (Rardin, Williams, Feyen, Tieman, & Qu, 2005). In the first section of the survey, respondents were asked to rate each of 50 factors identified from the literature and staff discussions according to the likelihood that it would impact a client missing an appointment. Ratings were requested according to a 5-point Likert scale: 1 strongly disagree, 2 disagree, 3 don't know or not sure, 4 agree, and 5 strongly agree. One factor was repeated to check response reliability. The factor within the client theme for attendance behavior included history of attendance, number of appointments missed, and past attendance. In the second section, respondents were asked to list and describe any characteristic not listed in the first section that they believe impacts the likelihood of

missed appointments. In the third section, respondents were asked to write in the first, second, and third most important factors listed in the first and second sections. Finally, respondents were asked to identify which category describes their position: front desk, nursing staff, or physical therapist. We estimated that it would take staff approximately ten minutes to complete the survey. The survey was sent to rehabilitation clinic administrators to determine if they would find the survey useful and be willing to distribute it. The response was that 26 local physical rehabilitation clinic administrators in a two county area of northwest Florida were willing to distribute the survey.

Results

Survey Section 1: Staff Ratings

Three staff categories were considered: physical therapist, front desk, and nursing staff. For each staff category, we organized the factors and their ratings by client, organizational, and extrinsic themes in Tables 3, 4, and 5 respectively. While the factors are abbreviated in Tables 3, 4, and 5 to conserve space for readability, the original survey is available by contacting the lead author. In reviewing Tables 3, 4 and 5, it is interesting to note that on average, all categories of staff rated the extrinsic theme "form of payment" as an important factor for client non-attendance. On average, the front desk staff rated the organizational theme cost of care in Table 4 and the extrinsic theme form of payment in Table 5 higher than any of the client themes in Table 3. The clinical staff, on the other hand, rated some of the client themes higher than or the same as cost of care. The variability in responses was somewhat high, with the greatest standard deviation, 1.5, from nursing staff rating the organizational factors month of appointment and referral source in Table 4. Table 3 also demonstrates that respondents repeatedly rated factors with consistency; for example, history of attendance, number of missed appointments, and past attendance were rated similarly as relevant to the client theme attendance behavior.

Survey Section 2: Staff Free Response

In the second section of the survey, the staff was asked to identify additional factors that were not previously rated. Of the 75 completed surveys, only 13 respondents wrote additional factors. One physical therapist respondent identified a new factor not included in the Survey Section 1 questions: client's motivation. Twelve of the respondents did not identify any additional factors; instead they repeated factors listed in Survey Section 1. Four physical therapists and one front desk staff member repeated employment status or work in Section 2. Physical therapists also repeated one time each: health of client (illness), client trust in physical therapist, client's knowledge of treatment, client's family, client's perception and satisfaction, progress of treatment, and environment of physical therapist experience. Nursing staff also repeated one time each: payment method and weather.

Survey Section 3: Staff Rankings

In the third section of the survey, the staff members were asked to list the top three factors with one being the most important. The results are summarized in Figures 1, 2, and 3 for the client, organizational, and extrinsic themes respectively. Because different numbers of staff in each category completed surveys, Figures 1, 2, and 3 report the percentage of staff ranking each factor as first, second, or third in significance.

In Figure 1, over 45% of physical therapists rated history of past attendance in the top three, but only 6% of front desk staff rated it in the top three. Similarly, almost 25% of physical therapists rated knowledge of treatment in the top three, while less than 20% of nursing staff and 0% of front desk rated it in the top three. Figure 1 illustrates that staff perceptions differ by more than 10% for the first

Table 3
Summary of Survey Section 1 Staff Ratings by Staff Role for Client Factors

		M			*SD*		
Theme	Factor[a]	PT	FD	NS	PT	FD	NS
Age	Client age	3.0	3.1	3.3	1.1	0.9	1.0
Gender	Client's gender	2.1	2.1	2.3	0.9	1.0	1.0
Ethnicity	Client ethnicity	2.2	2.3	2.3	1.0	0.9	1.1
Language	Client speaks different language	2.8	3.1	2.6	1.1	1.2	1.3
	PT speaks different language	3.2	2.9	2.9	1.2	1.3	1.3
Employment	Client's employment status	3.7	3.8	3.4	1.0	0.9	1.1
	Type of employment	3.3	3.5	3.5	1.2	0.9	1.0
Socio-economic	Socioeconomic status	3.5	3.2	3.0	1.0	0.9	1.3
	Client access to telephone	2.8	2.8	3.0	1.0	1.2	1.3
Family	Adults with children	3.6	3.5	3.7	1.1	1.2	1.1
	Client's marital status	1.8	1.9	2.0	0.9	0.8	1.0
Type of care	Client's first or return visit	3.3	2.7	3.8	1.1	1.1	0.9
Forgetting	Client forgetting	3.8	3.6	4.0	0.9	0.8	0.9
Client Health	Presence of chronic illness	3.8	3.7	4.3	0.7	0.9	0.6
Health	Severity of medical problem	3.7	3.3	3.8	0.8	1.1	1.3
	Medications used by client	2.8	2.5	3.4	1.1	1.0	0.9
Perceptions of Care	Client's treatment progress	3.9	2.9	3.9	0.8	1.1	1.2
	Client knowledge of PT	3.8	3.5	4.0	1.2	1.0	1.3
	Client's emotions	3.8	3.5	3.8	0.9	1.0	0.7
	Urgency of physical therapy	3.6	3.3	3.6	1.3	1.3	1.1
	Client's worry	2.9	3.1	3.5	1.0	1.0	1.0
	Client's intensity of therapy	3.5	3.6	3.4	1.0	1.1	1.2
Attendance Behavior	History of attendance	4.4	3.9	4.4	0.7	0.8	0.7
	Number of missed appointments	4.3	3.4	4.2	0.6	1.0	0.6
	Client missed first appointment	4.2	3.3	3.8	0.9	1.0	1.1
	Past attendance	4.1	3.5	4.2	0.9	1.2	0.8
	Past tardiness	4.1	3.7	4.2	0.8	1.0	0.9

Note. PT = physical therapist. FD = front desk staff. NS = nursing staff. [a]Factors are abbreviated to conserve space.

seven factors graphed. The last factor, socioeconomic, was seldom ranked in the top three by any of the staff.

For the organizational features in Figure 2, cost of care was ranked in the top three by over 55% of front desk staff and over 30% of the clinical staff. Over 35% of nursing staff, but less than 7% of front desk staff rated client satisfaction in the top three. Ability to schedule was ranked by over 30% of the front desk staff, but only approximately 10% of the clinical staff. Five of the eight organizational factors ranked by the three categories of staff differed by more than 10%.

In Figure 3, while over 35% of nursing staff and over 25% of front desk staff rate weather and transportation in the top three, less than 18% of physical therapists rate these two factors in the top

Table 4
Summary of Survey Section 1 Staff Ratings by Staff Role by Organizational Factors

		M			*SD*		
Theme	Factor[a]	PT	FD	NS	PT	FD	NS
Cost of Care	Cost of care	3.9	4.5	4.4	1.1	0.8	0.8
Scheduling	Appointment reminder missed	3.3	2.6	3.6	1.0	1.0	1.4
	Appointment lead time	3.5	3.1	3.3	1.0	1.2	1.2
	Appointment frequency	3.0	3.1	2.9	1.1	1.0	0.9
	Time of day	3.2	3.6	3.5	1.1	1.1	0.9
	Day of the week	2.5	2.9	2.7	1.2	1.0	1.2
	Month of appointment	2.3	2.5	2.9	1.1	1.1	1.5
	Day of the month	2.0	2.2	2.8	0.9	0.8	1.1
Clinic Environment	Clinic environment	3.6	3.0	3.5	0.9	1.2	1.4
	Wait of previous visit	3.4	2.7	3.3	1.0	1.1	1.4
	Client satisfaction	4.3	3.8	4.4	0.7	1.2	0.7
	Client's trust in PT	4.0	2.7	3.8	1.2	1.1	1.4
	Gender of PT	2.2	2.5	2.2	0.9	1.2	1.0
	PT's ethnicity	2.1	1.9	1.8	0.9	0.7	1.0
Referral Source	Referral source	2.6	2.6	2.9	1.1	1.3	1.5

Note. PT = physical therapist. FD = front desk staff. NS = nursing staff. [a]Factors are abbreviated to conserve space.

Table 5
Summary of Survey Section 1 Staff Ratings by Staff Role for Extrinsic Factors

		M			*SD*		
Theme	Factor[a]	PT	FD	NS	PT	FD	NS
Transportation	Mode of transportation	4.0	4.0	4.3	0.8	0.9	1.0
	Client's travel distance to clinic	3.8	3.6	3.8	1.0	1.1	0.9
	Number of PTs within 25 miles	2.6	2.8	3.2	1.1	1.0	1.3
Form of Payment	Form of payment	4.5	4.4	4.6	0.7	0.8	0.9
Weather	Precipitation on appointment day	3.8	3.6	4.1	0.8	1.1	1.4
	Sunshine	3.0	2.4	2.4	1.1	1.0	1.2
	Temperature outside	2.8	3.3	3.5	1.1	1.3	1.2

Note. PT = physical therapist. FD = front desk staff. NS = nursing staff. [a]Factors are abbreviated to conserve space.

Figure 1. Percentage of Nursing Staff, Front Desk Staff, and Physical Therapists Ranking Client Factors that affect Non-Attendance in the Top Three

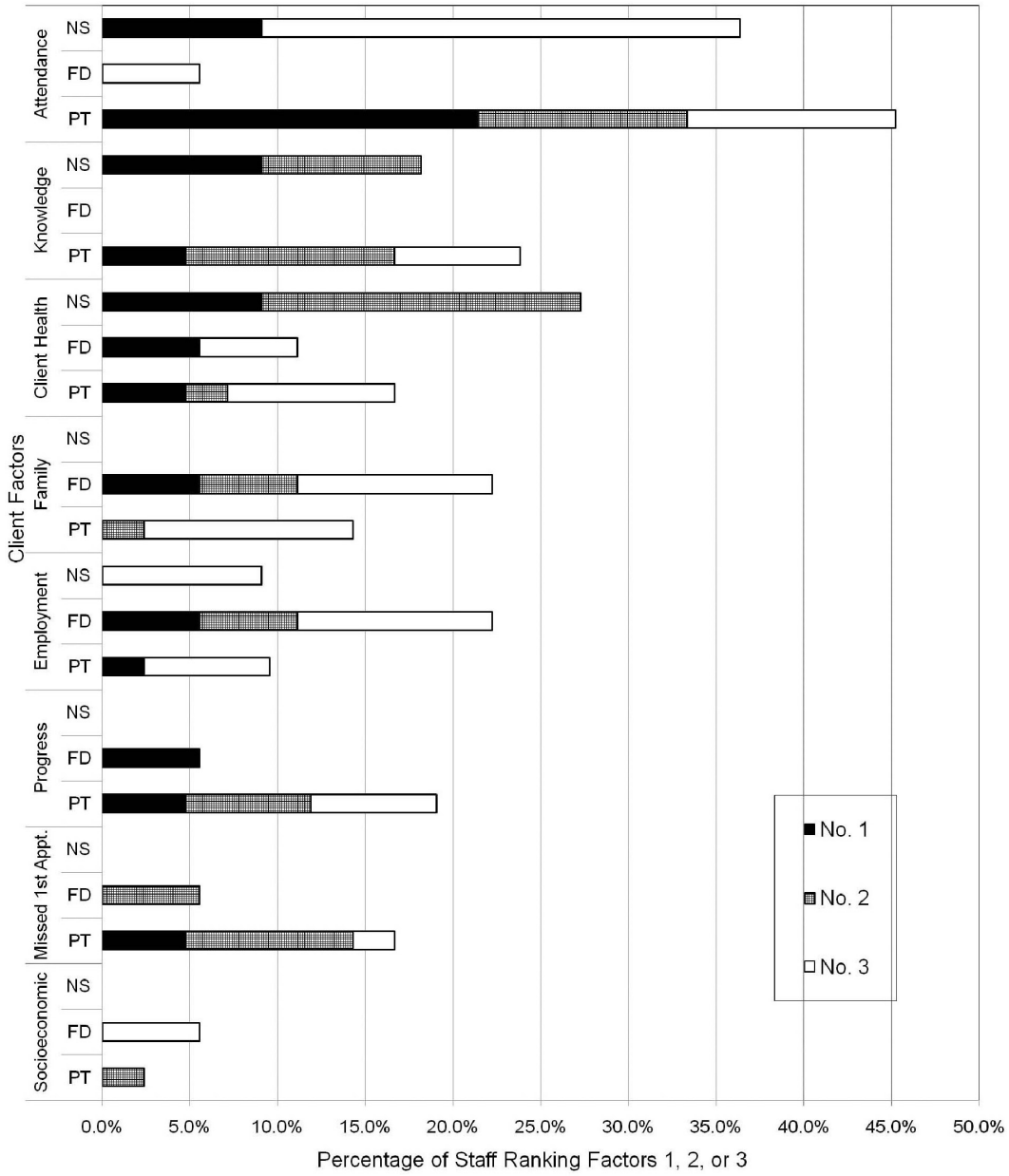


Figure 2. Percentage of Nursing Staff, Front Desk Staff, and Physical Therapists Ranking Organizational Factors that affect Non-Attendance in the Top Three

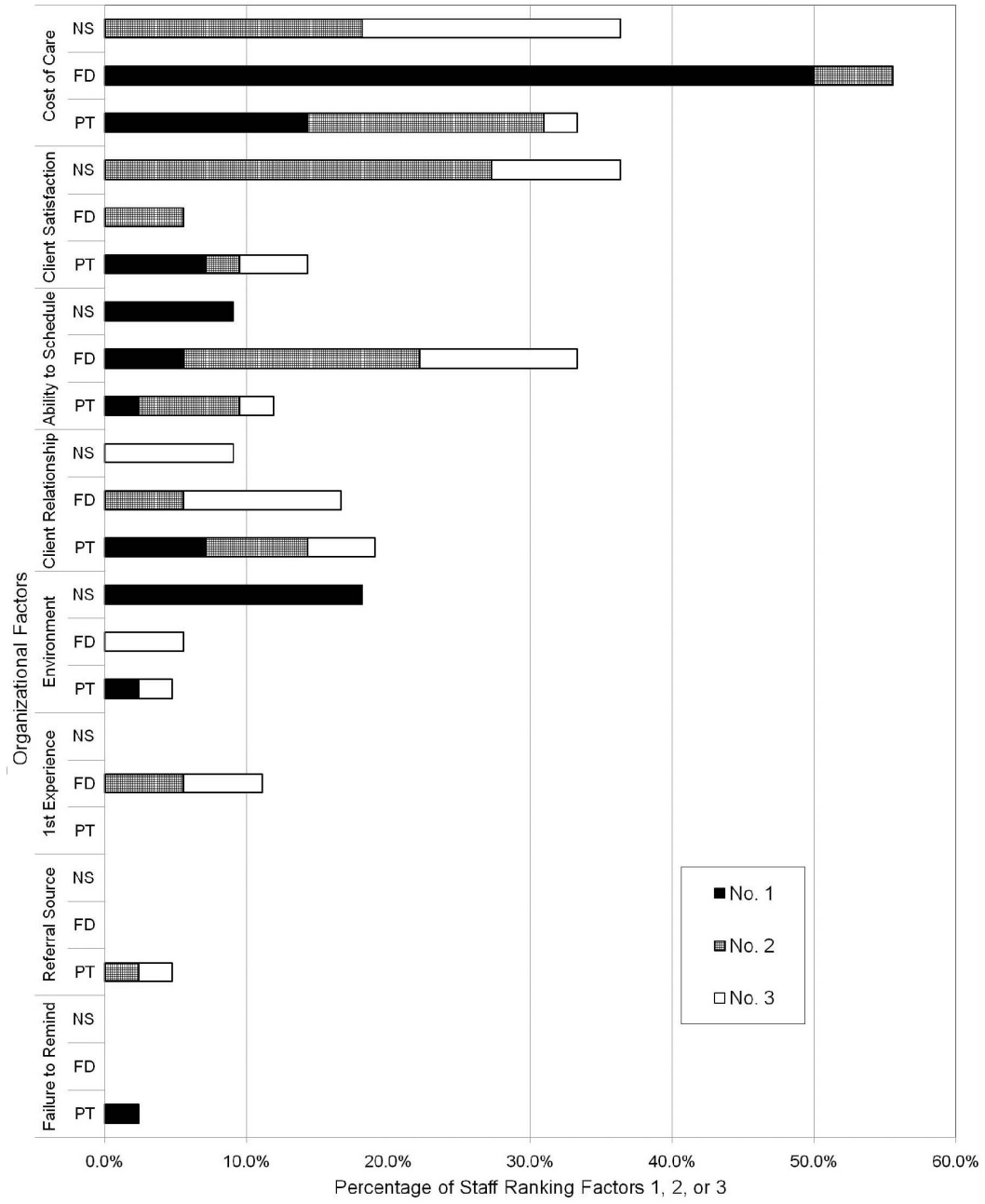
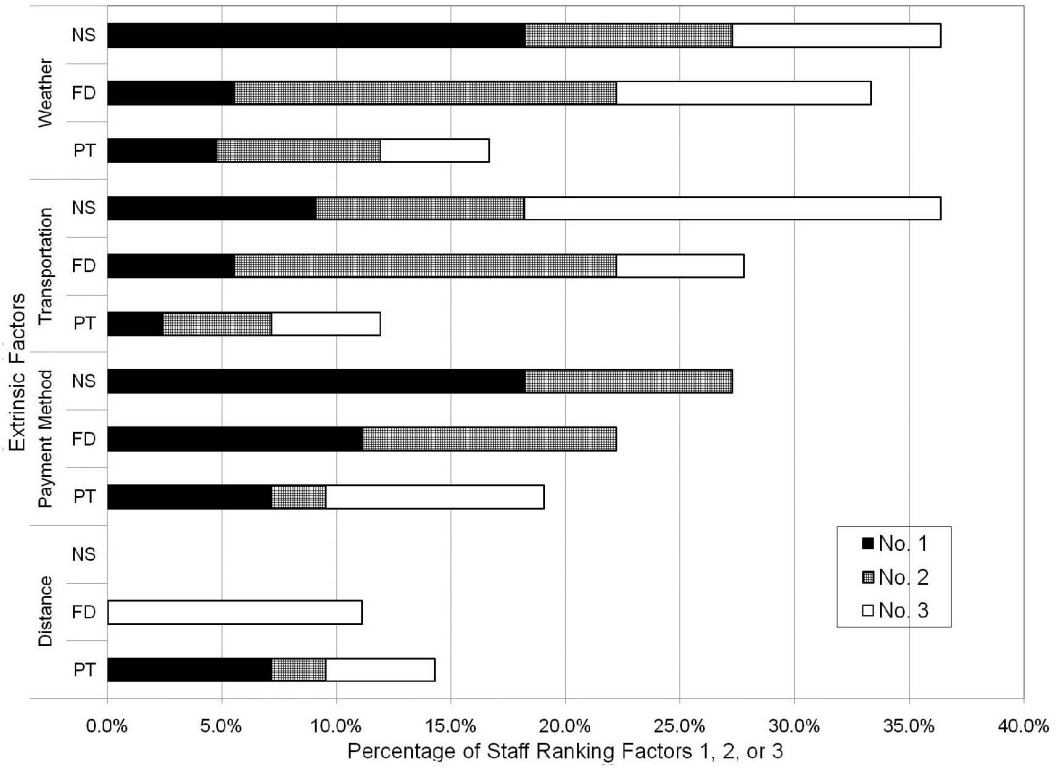


Figure 3. Percentage of Nursing Staff, Front Desk Staff, and Physical Therapists Ranking Extrinsic Factors that affect Non-Attendance in the Top Three



three. Three of the four extrinsic factor ranks varied by more than 10% for the three staff categories. On the other hand, the administrative and clinical staffs show agreement on payment method as a client non-attendance factor.

Discussion

In this paper, we set out to determine whether staff perceptions provide any new factors, whether they support the factors identified in the literature, and whether they agree among different staff roles. A new factor was identified by staff that differed from those listed in Survey Section 1 from the literature. A physical therapist identified client motivation as an important factor in the free response Survey Section 2. Brewer et al. (2000) explored whether psychological factors including self-motivation predict rehabilitation adherence which includes appointment attendance and home exercise completion. Brewer et al. found that client motivation was only a predictor of home exercise completion and that their statistical analysis did not reveal any significant predictors for attendance.

The survey indicates that staff perceptions differed from the literature regarding which factors are most critical to evaluate in research studies. While significant or important themes with a frequency of five or more references in Table 2 were age, perceptions of care, type of care, client health, scheduling, attendance behavior, and ethnicity in decreasing order of frequency, few of these factors

were rated the highest by physical rehabilitation staff. In Tables 3, 4, and 5, staff consistently rated one of the themes frequently evaluated in Table 2 to be important, attendance behavior.

The studies from Table 2 that collected data through staff surveys as indicated in Table 1 by "SS," also reported important themes that differed from our staff survey. The Table 2 studies reported that staff believed forgetting, family, transportation, perceptions of care, client health, ethnicity, and type of care to be important (Gleeson et al, 1991; Hussain-Gambles et al., 2004; Spikmans et al, 2003; Worsfold et al, 1996). Of these 7 themes reported important in the literature, Tables 3, 4, and 5 show that only the following four themes (indicated by staff role) were important based on at least one factor rated with an average of 4.0 or higher: client health (nurses), transportation (all three staff roles), perceptions of care (nurses), and forgetting (nurses).

The results also demonstrated that staff perceptions vary on which factors are ranked most important in Figures 1, 2, and 3. Physical therapists most often focused on the client themes related to attendance behavior. Front desk staff, on the other hand, focused on the organizational themes related to cost of care and ability to schedule. The nursing staff perceived the client theme attendance behavior, the organizational themes that included both the cost of care and the client's satisfaction, as well as the extrinsic theme weather as the most critical to non-attendance.

Limitations

This study had several limitations which will provide opportunities for future research. The survey in this study required staff recall and the data were collected without subject identifiers. Thus, there was no way to verify staff perceptions with actual non-attendance factors. Since data for many of the non-attendance factors are not collected, such as mode of transportation or waiting time for appointments, it is not possible to verify some staff perceptions with the current data collected. Past studies have shown differences in staff and client perceptions, such as a Veterans Administration study that pointed out client goals for vocational rehabilitation differed from vocational rehabilitation staff goals (Debring et al., 2004). When the client is dependent on others, such as family members, for transportation and other types of support, determining the supporters' or family's goals may also provide important insights (Ryan, Wade, Nice, Shenefelt, & Shepard, 1996). Moreover, our study did not evaluate intervention strategies or the physical rehabilitation staff perceptions regarding the relevance of a particular intervention strategy. Several studies discussed intervention strategies such as appointment reminders. However, rehabilitation administrators need to know whether the staff perceives the intervention strategy to be relevant and whether the client needs that type of intervention. For example, a primary care study that surveyed receptionists regarding sources of stress and job satisfaction concluded that teamwork and support from practice managers could reduce stress from appointment problems. Similarly, a vocational rehabilitation counselor study found stress related to rehabilitation goals and recommended that supervisors improve communication and support as budgets allow (Bishop, Crystal, and Sheppard-Jones, 2003). Future research could be expanded to include not only staff perceptions by role but also client and supporter perceptions of non-attendance factors and related intervention strategies.

Our survey was limited to physical rehabilitation staff. This study raises the question whether vocational rehabilitation staff perceptions regarding client attendance differ among administrators, counselors, and support staff. In addition, since the study was conducted in a two county area, a future study could include a larger region.

Conclusion

Developing and implementing plans to improve rehabilitation clinic operations are important skills of rehabilitation administrators (American Health Consultants, 2004; Guo & Calderon, 2007). This

research may help rehabilitation administrators to form quality teams with diverse perspectives to develop new intervention strategies. The results of this paper suggest that not only should staff perceptions be evaluated, but that the staff role should also be identified. Our study suggests future research directions to determine the relationship between staff perceptions according to staff role, client needs, and intervention strategy alignment.

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