

ORIGINAL RESEARCH ARTICLE

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# Factors influencing utilization of physiotherapy services by patients and people living with disability at Busia County Referral Hospital in Kenya

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## Abstract

**Background:** Physiotherapy, a component of primary health care, could be a remedy for physical challenges permeating widely in the world community due to non-communicable diseases trauma and infections.

**Objectives:** To establish the level of knowledge about physiotherapy and the association between level of knowledge and demographic profile among people living with disabilities and physiotherapy patients and how it influences utilization of physiotherapy services in Busia, Kenya.

**Method:** This was a descriptive cross-sectional quantitative study. One hundred fifty-eight participants were involved. Physiotherapy patients and people living with disabilities male and female above 18 years were purposively selected, and they completed self-administered questionnaires between August and November 2019. Data was cleaned, organized, and scientifically analyzed.

**Results:** Most of patients and PWD (67%) attended treatment sessions once a week only as there is inadequacy to meet their needs of treatment and it is difficult for them (87.42%) to recommend physiotherapy to others for they had lower level of knowledge of the importance of physiotherapy. The main challenge for patients and PWD to attend physiotherapy was lack of money (55.71%) and distance to hospital (63.3%).

**Conclusion:** Lower utilization of physiotherapy services in Busia County could be due to inadequate knowledge about physiotherapy, lack of finances to pay for physiotherapy, attitude of the health care providers towards physiotherapy, and inadequate infrastructure. There is a need to create awareness about physiotherapy and integrate physiotherapy service at all levels of practice of the components of primary health care in order for Busia community to benefit.

**Keywords:** Physiotherapy, Utilization, Non-communicable diseases, Communicable diseases

## Introduction

Globally, there has been a tremendous increase in physical challenges due to arthritis, cardiovascular diseases leading to strokes, diabetes leading musculoskeletal and

neurological challenges, respiratory diseases, like asthma and bronchiectasis, cancer, and psychiatric conditions due to stress [1]. These conditions are linked to complications of non-communicable diseases, injuries, violence, and general ill-health. These could be prevented by appropriate utilization of physiotherapy services. The presence of these physical complications points to the possibility of underutilization of physiotherapy services [2]. Despite the introduction of physiotherapy services

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in Kenya after the second World War 1945, about 25% of the Kenyan population is obese, the high prevalence being in women in the mid-age in urban areas [2]. The knowledge of how much in terms of percentage physiotherapy is being utilized in Kenya is still undocumented, though it is important for it provides the bases on which to discuss utilization of physiotherapy in Kenya. There is need of a strategy for Kenya to control current trend of occurrence of complications (obesity, hypertension, cancer diabetes and arthritis) due to both communicable and non-communicable diseases [2].

The prevalence of people with disabilities globally is 15%, which is attributed to global population aging, which arises in chronic conditions including non-communicable diseases and an increase in natural and human-made disasters [3]. The level of knowledge about the attributes of physiotherapy in physical health among people living with disabilities and patients attending physiotherapy service may help in pointing out the utilization of physiotherapy situation at the Busia County Hospital.

Physiotherapy and other rehabilitation interventions are advocated for as the fundamental process to support physical independence, mental, social, and vocational abilities [3]. This idea is particularly important for countries such as Kenya, where there is underutilization of physiotherapy services. Based on the study done [4], there was reduced utilization of physiotherapy services in Kenya since its introduction after the second World War 1945 due to various factors, like distance from hospital to patients' homes, shortage of physiotherapists, lack of physiotherapy equipment, and prognostic information. Although the study was carried out in a region with different cultural and socio-economic dynamics compared to Busia County, which can lead to different findings [4]. The mean social-economic activity for Busia County community is agriculture, dairy farming and across Kenya Uganda board trade. Kilifi County is located in the Eastern part of Kenya along the coastal region. Kilifi is about 1000 km from Busia. The coastal region where Kilifi is found has hot and dry climatic conditions throughout the year, while Busia has benign climatic conditions throughout the year. The Kilifi community's primary engagement is fishing and hospitality in the tourism industry. In study by [4], the reasons given for reduced utilization were personal perceptions that involved a small group of physiotherapy users, which could not be generalized to the entire Kenyan population. The hot climatic conditions in Kilifi might lead to avoidance in engaging in physical activities by the population leading to reduced utilization of physiotherapy. From personal observation and interaction with Busia

county population, it is noted that there is high presence of physical challenges originating from both communicable and non-communicable health events. It is therefore paramount to carrying out this study to establish whether the level of knowledge about physiotherapy among physiotherapy patients and PWD has any influence on utilization of physiotherapy services. The study also considers whether there is any association between the demography attributes of the study population and the level of physiotherapy utilization at Busia County Referral Hospital.

### Material and methods

This current study is a part of a study carried out to explore factors that influence the utilization of physiotherapy services at BCRH in Busia and a part of it has been submitted to IJPHY for publication. This was a quantitative cross-sectional study using both researcher assisted and self-administered questionnaire whose aim was to obtain reliable data through observation of variables in a single moment [5]. BCRH is a county referral hospital with bed capacity of 300 and a workforce of 1012 health workers. The county referral hospital has the Association of Physically Disabled of Kenya unit taking care of the needs of people living with disability in Kenya. The hospital has a general out-patient clinic, surgical, internal medicine, gynecology and obstetrics, mother-child health clinic, dental, and physiotherapy department which was established in 1966 and has occupational therapy orthopedic for functional aids and mental health

The population comprised of patients attending physiotherapy and people living with disabilities from Busia County who were invited to participate in the study. PWD 120 registered with Association of Physical Disabled of Kenya (APDK) were approached and 58 participated and 480 patients/clients being seen in physiotherapy OPD were approached and 100 participated.

Table 1 shows the study participants, which included physiotherapy patients and people living with disability.

**Table 1** Calculation of the sample size of the study

Rao soft parameter	PWD	OPD patients/clients
Margin of error	5%	5%
Population size	120	480
Response distribution	50%	50%
Recommended sample size with 80% confidence interval	70	123

These registered with APDK, living in Busia County for over 6 months and with no challenges with verbal communication, were included in this study. Patients who had attended physiotherapy treatment for 3 sessions and above were included in this study.

The study from [6] on the utilization of post-natal physiotherapy services at Mulago and Mengo hospitals in Kampala Uganda which had been used in Lusaka Zambia on Lusaka women-friendly project by Mackeith, Murray, Standing, Kumwenda, and Ahmed, 2001 was adopted for this study. This questionnaire was validated by six experts who had over 10-year experience in both clinical and academic physiotherapy platforms for use in this study.

A pilot study with 10% of the study population (Table 1) was done for reliability. Cronbach's test was done on the results of the pilot study to determine internal consistency. The Cronbach's score was 0.765 on the test scale indicating high internal consistency of the questionnaire [7], which implies it is reliable. Ethical clearance was obtained from various research ethics committee as follows: the University of the Witwatersrand Human Research Ethics Committee (Medical) clearance certificate number M 190249, Moi Teaching and Referral Hospital/Moi University College of Health Science Research and Ethics Committee (IREC), clearance certificate number MU/MTRH-IREC-0003346, and National Commission of Science, Technology and Innovation (NACOSTI), clearance certificate number P/19/76458/31509. The in charges granted permission to access the patients and people living with disabilities. Informed written consent was obtained from all the participants by the researcher.

A pilot study was conducted with 10% ( $n = 16$ ), 10 physiotherapy patients and 6 PWD) of the study participants at Busia County Referral Hospital. The pilot study helped to determine the reliability of the questionnaires, the amount of time it took to complete the questionnaire, and any ambiguity that existed in the questions, there were no adjustment of the questionnaire following pilot study.

Recruitment for the main study was done at Busia County Referral Hospital department of physiotherapy outpatient, and Association of Physically Disabled of Kenya. Names of members who meet the inclusion criteria were randomly picked, ensuring gender balance to avoid being biased in getting the number required for study from each department.

The data from completed questionnaires filled by the respondents were entered into Microsoft excel<sup>®</sup> and then to Statistical Package for Social Sciences (SPSS) version 25 for analysis. A confidence interval of 80% was used in this study to get a minimal sample size representation. Cronbach's alpha coefficient was used to test for the reliability of the questionnaires. Pearson's chi-square was

used to test for the association between level of knowledge and demographic profile of PWD, and patients attending physiotherapy at Busia County Referral Hospital. A multinomial logistic regression analysis was performed to determine the relationship that best fits the observed data in terms of the access and utilization of physiotherapy. A  $p$  value less or equal to 0.05 indicates the factor is significant. The variable in this study was illustrated using frequency tables.

## Results

The study undertook to determine factors that influence the utilization of physiotherapy services at Busia County Referral Hospital. The aim was to determine the level of Knowledge and use of physiotherapy service among patients and people living with disabilities in Busia County and the association between the level of Knowledge and demographic profile of PWD and patients attending physiotherapy at Busia County Referral Hospital was established. The Pearson's chi-square test was used to determine if any association existed between the variables. The internal reliability of the questionnaires used in this study was determined by Cronbach's alpha which was 0.7647. where a score of over 0.7 indicates high internal consistency meaning the tool is reliable [8]. The number of participants invited were 120 PWD and 480 physiotherapy patients totaling to 600, and only 158 (26.3%) participated.

From Table 2, the males are the majority (53.80%) among the physiotherapy patients and PWD. The highest number of patients and PWD is in the age range of 45 to 55 (37.34%). The majority (40.51%) of PWD and physiotherapy patients have attained primary education, 41%, and 14% had not achieved any education. The most common form of employment was by the government with 29.75% of physiotherapy patients as well as 25.95% of PWD this was followed by farming with 22.15%. The majority of physiotherapy patients and PWD earned between Kshs.40, 000, and 69999 (43.04%) and are affiliated to protestant group (47.46%), and most of them are married (81.01%).

There are several non-communicable diseases and road traffic accident complications as shown in Table 3. Hemiplegia due to stroke is leading with 18.98%, followed by trauma at 10.75% and diabetes at 8.86%, and the least congenital club foot at 1.89%.

From Table 4, the majority of the physiotherapy patients and people living with disability agreed (55.68%) that physiotherapy was one of five standard services at Busia County Hospital. Only 25.93% of physiotherapy patients and PWD agreed that there was a lot of information on the importance and utilization of physiotherapy service among all the community members. The majority

**Table 2** Demographic distribution information for physiotherapy patients and PWD ( $n = 158$ )

Gender	N (%)
Female	73 (46.20)
Male	85 (53.80)
<b>Age</b>	
15–25	5 (3.16)
26–35	25 (15.82)
36–45	45 (28.48)
46–55	59 (37.34)
56 and above	24 (15.19)
<b>The average distance from the hospital (km)</b>	15.50(14.32)
<b>Disability history</b>	
Since birth	10 (6.33)
A few days	3 (1.90)
Two weeks	6 (3.80)
A few months	46 (29.11)
More than 1 year	93 (58.86)
<b>Level of education attained by patients</b>	
None	22 (13.92)
Primary	64 (40.51)
Secondary	31 (19.62)
Tertiary	23 (14.56)
University	18 (11.39)
<b>Occupation</b>	
Government employee	47 (29.75)
Self-employed	41 (25.95)
Farmer	35 (22.15)
Domestic work	32 (20.25)
Others	3 (1.90)
<b>Monthly income</b>	
0–9999 Kshs	31 (19.62)
10,000–39,999 Kshs	40 (25.32)
40,000–69,999 Kshs	68 (43.04)
70,000–79,999	13 (8.23)
> 80,000 Kshs	6 (3.80)
<b>Religion</b>	
Protestant	75(47.47)
Roman Catholic	71(44.94)
Muslim	12(7.59)
<b>Marital status</b>	
Married	128(81.01)
Never married	15(9.49)
Widowed	9(5.70)
Divorced	6(3.70)
Separated	1(0.6)

of physiotherapy patients and PWD (88.60%) agreed that information about the importance and utilization of physiotherapy services was more accessible in the hospital than in the community.

**Table 3** Common diagnosis for the patients and PWD ( $n = 158$ )

Diagnosis	System involved	N	%
Stroke (hemiparesis/hemiplegia)	Cardiovascular	30	18.98
Knee arthritis	Musculoskeletal	10	6.32
Hip arthritis (hip replacement)	Musculoskeletal	12	7.59
Back pain	Musculoskeletal	14	8.86
Trauma	Miscellaneous	17	10.75
Paraparesis	Nervous system	6	3.79
Paraplegia	Nervous system	5	3.16
Diabetes	Miscellaneous	14	8.86
Club foot	Musculoskeletal	3	1.89
Peripheral nerve injuries	Nervous system	5	3.16
Ankle sprain	Musculoskeletal	4	2.53
Post-injection palsy	Nervous system	3	1.89
Amputee (above the knee, below knee, and bilateral)	Musculoskeletal	10	6.32
Sciatica	Nervous system	10	6.32
Post-poliomyelitis	Nervous system	13	8.22
Others	Miscellaneous	2	1.26

Majority of the physiotherapy patients and PWD attend physiotherapy once a week (67%), while those who attend three times a week is 4% (Table 5).

Majority of the patients agreed that hospital distance (55.71%) and lack of money for treatment and transport (63.3%) were their main obstacle to attending therapy. Majority of the physiotherapy patients and PWD expressed that culture (98.09%) and being handled roughly by the physiotherapy (98.72%) had the least influence on their obstacles on attending physiotherapy services (Table 6)

As shown in Table 7, majority of the physiotherapy patients and PWD (90.32%), with income between 0 and Kshs.9,999 agreed that it was the amount of money one had that determined access to physiotherapy services. All the patients that earned Kesha. 80,000 and above disagreed that it was the amount of money one had that determined access to physiotherapy access. The chi-squared test showed that there was a significant association between income of the patients and access to physiotherapy services at BCRH ( $\chi^2 = 88.08$ ,  $p$  less than or equal to 0.01).

### Logistic regression

A multinomial logistic regression analysis was performed to determine the relationship that best fits the observed data in terms of the access and utilization of physiotherapy. The data and calculations presented are based on the multinomial logistic regression model for access and utilization of physiotherapy at BCRH.

**Table 4** Assessment of the level of knowledge and utilization of physiotherapy services from patients and PWD (*n* = 158)

To what extent do you agree with this statement?	Disagree completely n%	Somewhat Disagree n%	Somewhat Agree n%	Strongly Agree n%	Agree Completely n%
Physiotherapy service is one of the five common services given in all health service institutions in Busia County.	30 (18.98)	40(25.31)	83(52.53)	2(1.26)	3(1.89)
There are a lot of information about the use and the importance of physiotherapy services among all the community members.	82(51.89)	35 (22.15)	30(18.98)	5(3.16)	6(3.79)
It is easy for one to get information about physiotherapy in the hospital than in the local community.	6(3.79)	13(8.22)	26(16.45)	76(48.10)	38(24.05)

**Table 5** The frequency physiotherapy patients and PWD attended physiotherapy services (*n* = 158)

How frequently do you attend physiotherapy services in a week?	Total	Male	Female
Once	104 (66.67)	47(45.19)	57(54.81)
Two times	46 (29.49)	21(45.65)	25(54.35)
Three times	6 (3.85)	4(66.67)	2(33.33)

The result in Table 8 shows that patients and PWD with a monthly income of 0–9999 and 10000–39999 were 0.792 times and 0.210 times on relative log odds scale likely to agree compared to those with income of KS40000–69999. However, those with income of 70000–799999 and 80000 and above were – 1.128 times and – 14.983 times on relative log odds scale were unlikely to agree compared to those with an income of 40000–69999.

**Table 6** Barriers that could lead to failure to attend physiotherapy by patients and PWD (*n* = 158)

Barriers, <i>n</i> (%)	Disagree completely n%	Somewhat disagree n%	Somewhat agree n%	Strong agree n%	Agree completely n%
Cultural factors were a challenge	137( 86.70)	18 (11.39)	3(1.89)	0(0)	0(0)
Being handle roughly by the physiotherapist	147(93.03)	9(5.69)	2(1.26)	0(0)	0(0)
Sometimes you could find nobody to attend to you	145(91.77)	9(5.69)	0(0)	0(0)	4(2.53)
Busy with domestic responsibilities	71(44.93)	45(28.48)	34(21.51)	8(5.06)	0(0)
Waiting time is too long before being attended to	125(79.11)	25(15.82)	8(5.06)	0(0)	0(0)
Informed by traditional medicine person that it was not good	77(48.73)	40(25.31)	28(17.72)	9(5.69)	3(1.89)
Far from home	41(25.94)	29(18.35)	24(15.18)	37(23.41)	26(16.45)
No money for transport and treatment	38(24.05)	20(12.65)	16(10.12)	23(14.56)	61(38.60)
Attending to other family matters	65(41.13)	37(23.41)	37(23.41)	11(6.96)	9(5.69)

**Table 7** Assessment of the association of the monthly income and access to physiotherapy services by patients and PWD (*n* = 158)

How would you rate your monthly income in terms of the amount	To what extent do you agree ... it is the amount of money one has that determines access to physiotherapy service rather than the level of education					Chi-square	P value
	Disagree completely n (%)	Somewhat disagree n (%)	Somewhat agree n (%)	Agree n (%)	Completely agree n (%)		
0–9999	2(6.45)	1(3.23)	4(12.9)	15(48.39)	9(29.03)	88.08	0.000
10,000–39,999	5(12.5)	5(12.5)	14(35)	10(25)	6(15)		
40,000–69,999	6(8.82)	20(29.41)	26(38.24)	8(11.76)	8(11.76)		
70,000–79,999	8(61.54)	3(23.08)	1(7.69)	0(0)	1(7.69)		
80,000 and above	6(100)	0(0)	0(0)	0(0)	0(0)		
Total	27(17.09)	29(18.35)	45(28.48)	33(20.89)	24(15.19)		

**Table 8** Multinomial regression with compliance to physiotherapy service

Monthly income	Coef.	St.Err.	t value	P value	[95% Conf	Interval]	Sig
0–9999	0.792	0.215	3.69	0.000	0.371	1.213	***
Constant	– 3.490	0.811	– 4.30	0.000	– 5.079	– 1.900	***
10,000–39,999	0.210	0.171	1.23	0.217	– 0.124	0.545	
Constant	– 1.168	0.560	– 2.08	0.037	– 2.266	– 0.070	**
40,000–69,999	0.000	.	.	.	.	.	
Constant	0.000	.	.	.	.	.	
70,000–79,999	– 1.128	0.353	– 3.20	0.001	– 1.819	– 0.437	***
Constant	0.894	0.711	1.26	0.208	– 0.499	2.288	
80,000 and above	– 14.983	583.449	– 0.03	0.980	– 1158.522	1128.555	
Constant	14.492	583.449	0.03	0.980	– 1129.047	1158.032	
Mean dependent var		2.522	SD dependent var			1.024	
Pseudo $r^2$		0.138	Number of obs			159.000	
Chi-square		59.804	Prob > $\chi^2$			0.000	
Akaike crit. (AIC)		390.843	Bayesian crit. (BIC)			415.394	

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$

## Discussion

This study was conducted in Kenya to establish the level of knowledge and factors that influence the utilization of physiotherapy services among patients and PWD at Busia County Referral Hospital. This was achieved through considering the level of knowledge about physiotherapy, patients, and PWD. The study also looked at the utilization of physiotherapy services by patients and PWD and the association of the demographic information of patients and PWD and the level of knowledge and use of physiotherapy services was also explored.

### Sample size and demographic information

Out of the 600 PWD and physiotherapy patients legible to participate, 158 (26.3%) participated in this study. In a similar study conducted in Papua New Guinea, their response rate was 15% with nursing officers contributing 46% and medical officers 10% [7]. In this study, the physiotherapy patients were 100 (20.83%) and PWD 57 (47.50%).

### The level of knowledge and use of physiotherapy service among patients and people living with disabilities in Busia County

At Busia County Referral Hospital, only 4% of physiotherapy patients and PWD agreed that physiotherapy services were one of the five standard services provided in all health institutions in Busia County. Only 7% of physiotherapy patients and PWD agreed that there were a lot of information about the use and the importance of physiotherapy services among the community members. This study at BCRH established that information about

physiotherapy was less in the community compared to hospital 72% of patients, and PWD expressed so. The scores indicated the level of knowledge about the importance and the use of physiotherapy to be low; thus, those community members who have not been referred by the health care providers have no idea about the usefulness of physiotherapy. This implies that most of the patients who are referred to physiotherapy in the hospital are in their chronic stage. In Scotland, the level of awareness is 34% of the general population of the importance, and the use of physiotherapy hindered the advocacy for self-referral, which was thought could improve utilization of physiotherapy services [8]. A low level of awareness of the importance of specific service will hinder one from seeking that service in case one is in need. Most of the physical challenges remain asymptomatic for some time, and the patient may not ask for help unless well informed about the availability and the importance of the services that can help. Patients suffering from non-communicable physical challenges seek care from general practitioners in the hospital when in pain. Therefore, for patients suffering from physical complications of non-communicable diseases may seek physiotherapy when it is too late.

Only 48% of the physiotherapy patients and PWD could refer friends for physiotherapy at Busia County Referral Hospital; this may imply that there could be a lack of satisfaction with physiotherapy services offered at the hospital. Most of the health conditions mentioned in this study require regular and consistent physiotherapy intervention for a specified period [9]. However, physiotherapy patients and PWD who attended physiotherapy once a week was 67%, while those who attend three times a week was 4%. The chronicity of those conditions may

be increased by spacing the treatment frequency by less than two days in a week. They were attending physiotherapy treatment once a week, which may not be adequate to make a change in patients' condition; therefore, no satisfaction and not willing to refer a friend or a colleague for physiotherapy by some of patients and PWD

The facilitation by the health care providers of the accessibility and utilization of physiotherapy was affected mainly by the department one worked and the profession one was affiliated to. For the patients, their main challenge was financial. Compared to a study by [10] where the main challenges were awareness on the availability and the importance of physiotherapy.

Physiotherapy patients and PWD within the Busia community in this current study indicated that money for transport (61%) and the distance between hospital to home (26%) were the main barriers for physiotherapy utilization. This may mean that the frequency of attendance for patients may be inadequate; therefore, this bring about the poor outcome for patients. As indicated before, the majority of patients attend physiotherapy once a week. This community may be struggling with low-income countries' socio-economic challenges like poverty, illiteracy, and cultural beliefs complicated with a low level of knowledge of the availability and importance of physiotherapy.

Numerous barriers could lead to reduced utilization of physiotherapy services, and this varies from communities to another in the world. Some physiotherapists handle patients carelessly [4], and this reflects negatively on the profession leading to reduced utilization [9]. Lack of infrastructure, equipment, and physiotherapists are among the barriers that are commonly mentioned [11].

## Conclusion and recommendations

### Conclusion

Physiotherapy patients and PWD expressed notable gaps on the utilization of physiotherapy services at BCRH which included the following. Limited information about physiotherapy within the community, therefore, fail them to realize that it is core a service at BCRH. Most of the patients and PWD could not manage to attend physiotherapy service as required at least three times a week due to lack of finances and distance from hospital to residences, and therefore physiotherapy service could not adequately meet their needs. Therefore, they could not recommend to a friend or a colleague physiotherapy services for it never met their needs.

It could also be concluded that there was an association between the utilization of physiotherapy services by the patients and PWD and monthly income. There was no association between the utilization of physiotherapy services and the level of education for patients and PWD. In

the context of this study, inadequate information about the importance of physiotherapy services and lack of finances by the general Busia County community influences utilization of physiotherapy services.

### Recommendations

Physiotherapists must ensure that it is evidence based and meeting the perceived needs of both patients and fellow health care workers. Physiotherapists should market their profession in all forums available, including community meetings, high schools, and primary schools, educating people on the importance of physiotherapy. Through community and religious leaders, forums can be created where the community members can be given the necessary information about physiotherapy. Physiotherapists need to engage the community through outreach programs with other members of primary health care to help in creating awareness about physiotherapy services.

From the results of this current study, there is a need to look into the following issues:

Why most of the patients and PWD are not willing to recommend physiotherapy to their friends or colleagues. To get the real situation of utilization of physiotherapy, the three main players' (physiotherapists, patients, and other healthcare service providers) views must be considered; hence, there is need to get physiotherapists' views.

### Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s43161-022-00076-w>.

**Additional file 1.**

**Additional file 2.**

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**Consent for publication**

Not applicable

**Competing interests**

All authors declare that they have no competing interests.

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