

Caregivers' Satisfaction Status with Services for Under-five Children and Associated Factors at Primary Health Care Units in Rural Ethiopia: Measuring Primary Health Care Responsiveness

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Abstract

Purpose: Caregivers' satisfaction with services provided to under-five children was hardly studied in the study area. Therefore, this study aimed to assess caregivers' satisfaction and associated factors at primary health care units in rural Ethiopia.

Patients and method: An institution-based cross-sectional study was conducted among 393 caregivers from April 1 to May 30, 2022, at selected primary health care units in southern Ethiopia. A systematic random sampling technique was employed to recruit participants for a face-to-face exit interview. A structured questionnaire was used to measure dependent variables and independent variables. The dependent variable was satisfaction, measured by a five-point Likert scale, '1' representing very dissatisfied to '5' representing very satisfied. Overall satisfaction status was defined as: caregivers who rated less than 75% of the total satisfaction score were classified as "dissatisfied" and those who scored >75% were classified as "satisfied". Descriptive statistics and binary logistic regression analyses were carried out. An adjusted odds ratio (AOR) with a 95% CI and a p-value of 0.05 was estimated to identify statistically significant variables.

Results: A total of 385 participants were interviewed, giving a response rate of 97.96%. The finding showed that 70% [95% CI: 65.8-74.0] of caregivers were satisfied. Caregivers: who had received all prescribed drugs from health facility that provided the care [AOR=3.2; 95% CI (1.9-5.3)], whose child received laboratory services [AOR=3.7; 95% CI (2.0-6.5)] and for whom the provider discussed diagnosis of the child [AOR=2.1; 95% CI (1.3-3.5)] were significantly associated with satisfaction with IMNCI services.

Conclusion: The overall caregivers' satisfaction with services provided to under-five children in the study area was low as compared to related studies. Receiving prescribed drugs and services from the health facility that provided care for the child and, discussing the diagnosis of the child were associated with caregivers' satisfaction. The rural district health system should give due emphasis to patient-centred care as well as improving supplies and drugs required to provide the services.

Keywords: Factors; IMNCI; Primary health care unit; Satisfaction; Ethiopia

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Background

Two-thirds of under the age of five children's death in Sub-Saharan Africa is attributable to preventable causes such as pneumonia, malaria, diarrheal diseases, measles, and HIV/AIDS; majority of these are exacerbated by malnutrition, which accounts for one-third of all deaths [1]. Ethiopia has the highest under-five mortality rates with more than 321,000 children under the age of five dying every year. More than 70% of these deaths are attributed to preventable causes [2].

Given the fact that children frequently present to health facilities with multiple preventable disease conditions, an integrated approach was required to manage them holistically. As a result, the Integrated Management of Neonatal and Childhood Illness (IMNCI) strategy, which constitutes early detection, effective treatment, and promotion of healthy habits in the family and community, was recommended [3]. IMNCI remains the cornerstone of improving the quality of care provided to sick children in health facilities in over 100 countries. In the African region, 22 countries are now implementing IMNCI in over 75% of

districts [4] Ethiopia adopted the strategy in 1996 [5].

Satisfaction refers to the state of contentment with an action, and is determined significantly by clients' expectations and experiences; it reflects the gap between the expected service and the experienced service [6,7]. Caregiver's satisfaction with IMNCI service is an important factor for the choice of health facility, compliance with services and follow-ups, and continuing with the health care. Moreover, it is used to measure the responsiveness of the health system to meet caregivers' expectations [8]. The agenda for compassionate, respectful, and caring (CRC) of health workers were launched as a transformation agenda under health sector transformation plan (HSTP) and a movement was created around it. Measuring CRC has been difficult since it is an emerging area, and there were no indicators to assess the progress. Therefore, Ethiopian ministry of health highlighted satisfaction as a measure of health system responsiveness [9].

Multiple bottlenecks such as: the number of days services are available, long waiting times, not receiving laboratory services, not receiving their first dose of medication at the health facility, and insufficient availability of drugs and supplies, interpersonal aspects, cost of services, time spent with provider, and healthcare delivery domains such as patients' characteristics: age, gender, and socioeconomic status, affects satisfaction with the care provided and impeding the reach of IMNCI services in the community [10-14].

Despite the fact that satisfaction with IMNCI services is critical to improve the service and improve patients' trust on the health system, little was known about satisfaction and associated factors on IMNCI service among Ethiopian caregivers in general and in the study area in particular. As a result, the aim of this study was to assess caregivers' satisfaction and associated factors with IMNCI services at primary health units in Kamba district, Southern Ethiopia.

Patient and Methods

Study setting, design and period

This study was conducted in Kamba district, southern Ethiopia. Kamba is located 610 kilometres south of Addis Ababa, the capital of Ethiopia. In the district, there were six health centers, one primary hospital, 31 health posts; four primary private clinics; and three drug stores. Total population of the district was 170,860, of which 83,721(49%) were males and the remaining 87,139(51%) were females. The estimated number of under-five children was 26,671. An institution-based cross-sectional study was conducted from April 1 to May 30, 2022.

Source and study patients

The source population for this study was all mothers/caregivers with under-five children who visit primary health care units in the Kamba district. The study population was mothers/caregivers with under-five children who visited under-five clinic at the health centers in district during the data collection period.

Sample size determination

The sample size was determined by the single population

proportion formula using the following assumptions (the level of significance of the population was taken to be 95%, $Z_{\alpha/2} = 1.96$). A 5% level of precision ($d = 0.05$), and 63.4% (proportion of caregivers satisfied with IMNCI service from a study done at Jimma primary health care units, Oromia region (10). By considering a non-response rate of 10%, the final sample size was 393.

Sampling technique

All six health centers found in Kamba district were included in the study. The previous two months' data were reviewed from Ethiopian Ministry of health data base the commencement of actual data collection. Hence, a total of 1260 cases attended the six health centers (Kamba health center (HC) = 180, Ossa HC = 180, Balta HC = 300, Hanika HC = 240, Maze HC = 240, Bola Anko = 120) in the previous two months. The desired sample size at each health center was determined by a proportional allocation based on the above figures. A systematic random sampling technique was employed to select the study participants. The interval (K) was calculated by dividing the total number of under-five cases ($N = 1260$) by the sample size, which was 393. $K = N/n = 1260/393 = 3$

Inclusion and exclusion criteria

Inclusion criteria: all caregivers of children aged less than five who came to the under-five clinic in the health centers of Kamba during the study period were included in the study. Exclusion criteria: mothers/caregivers who were aged below 18 years during the data collection period were excluded from the study.

Data collection instruments and procedures

A questionnaire prepared by referring to the Demographic and Healthy Survey for child health service quality assessment, the WHO integrated management of childhood illness handbook, and WHO standards to improve care for children in health facilities was adopted to the local context [15-17]. Six diploma nurses, data collectors and two supervisors (BSc in clinical science) participated in the data collection after they were informed of the aim and tools of the study for two days.

A pretested and structured Amharic version questionnaire was used for face-to-face exit interview of the participants. The caregivers were encouraged to feel free and told that the confidentiality of their responses will be assured.

Data quality assurance

Prior to the actual data collection, the questionnaire was pre-tested on 5% of the sample size in the health center outside of the study area. Internal consistency and reliability of the questionnaire were checked by the reliability index measurement for satisfaction questions (Cronbach's alpha), which was 0.86. To ensure the completeness, accuracy, and consistency of data collection, a session was held each day of the data collection period.

Data processing and analysis

To avoid logical errors and design skipping patterns, data were cleaned, coded, edited, and entered into Epi Data Version 7.2 after collection. To ensure the high quality of the information, the data

were checked for completeness and exported to SPSS Window version 27 for analysis. Descriptive statistics were done by computing proportions, frequencies, and means by using tables, figures, and charts. The satisfaction of caregivers was measured using a Likert scale with 11 items. Bivariate analysis was used to check for candidate variables. The Hosmer-Lemeshow test was used to check the goodness-of-fit of the model. All variables with a p-value <0.25 were taken into the multivariable analysis to control for possible confounders, and the significance of the findings was considered at p<0.05. The result was presented in crude odds ratio (COR) and adjusted odds ratio (AOR) with a 95% confidence interval.

Operational definitions and measurement

Caregiver Satisfaction-is the satisfaction of caregivers gained during service delivery. It is the caregivers view to care level gained that increases the likelihood of future IMNCI services (18). It was evaluated with 11 items, each with a five-point Likert scale: very dissatisfied (1), dissatisfied (2), neutral (3), satisfied (4), and very satisfied. Every caregiver who scored less than 75% of the maximum calculated satisfaction score from the caregivers' satisfaction questionnaire were labeled "dissatisfied" while those who scored more than 75% of the maximum satisfaction score(55) from caregivers' satisfaction questionnaire were labelled satisfied [18].

Ethics approval and consent to participate

The study protocol was approved by the Research Ethics Review Committee (RERC) of Arba Minch University. All research methods were cross-checked against the Helsinki Declaration, an international scientific research ethics declaration. We obtained an informed verbal consent because we believe that the study participants face only minor risks with this type of study. RERC protocol number was assigned, IRB/0129/2022, prior to the start of the study. Social distancing, no-contact greetings face masks, and hand sanitizations were used to reduce the risk of COVID-19 transmission.

Results

Socio-demographic characteristics of the study participants

In this study, a total of 385 study participants were involved, giving a response rate of 97.96%. Of the respondents, 334 (86.8%), 349 (90.6%), and 227 (59%) were female, Gamo in ethnicity, and protestant in religion, respectively. The mean age of the respondents was 29.43 (SD of 6.8) years, ranging between 18 and 65 years. Of the study participants, 341 (88.6%) were married, 276 (71.7%) were housewives, and 172 (44.7%) had no formal education. The majority of the sick children, 239 (62.1%) who visited health centers were females, 153 (39.7%) were between the ages of 12 and 24 months, and the majority of 327 (84.9%) came from rural areas (Table 1).

Health Facility related characteristics of the respondents

Among the total respondents, medicines were prescribed for

Table 1. Socio-demographic characteristics of the caretakers and their sick children in the health centers of Kamba district, Southern Ethiopia, 2022.

Socio-Demographic Variables	Response category	Frequency (n=385)	Percentage (%)
Sex of the Child	Male	146	37.9
	Female	239	62.1
Age of the child (in months)	<12	97	25.2
	12-24	153	39.7
	24-36	83	21.6
	>36	52	13.5
Sex of caretaker	Male	51	13.2
	Female	334	86.8
Age of caretaker (in years)	18-24	97	25.2
	25-34	205	53.2
	≥35	83	21.6
Educational status	No formal education	172	44.7
	Primary	136	35.3
	Secondary	43	11.2
	Tertiary and above	34	8.8
Ethnicity	Gamo	349	90.6
	Wolaita	15	3.9
	Other*	21	5.5
Religion	Protestant	227	59.0
	Orthodox	142	36.9
	Muslim	16	4.2
Marital status	Married	341	88.6
	Single	18	4.7
	Divorced	15	3.9
	Widowed	11	2.9
Occupational status	Housewife	276	71.7
	Farmer	40	10.4
	Government employee	46	11.9
	Merchant	23	6
Residence	Rural	327	84.9
	Urban	58	15.1
Relation to child	Mothers	336	87.3
	Others*	49	12.7

Key Note: Other* (Gofa, Amhara),Others* (father, grand parent, relative).

357 (92.7%) respondents, and 138 (39%) of the respondents were reported to have gotten all their prescribed drugs from the health centre's pharmacy. One-third, 128 (33.2%), of the children received laboratory services, and 95 (24.7%) of the children received their first dose of medication at the facility before they left. The majority of the caregiver respondents, 312 (81%), recommended their friends or family visit the health center (Table 2).

Health care providers related characteristics at health facilities

Most respondents (368, 95.6%) said they understood how much of each drug to give their child on a daily basis. Regarding information, 171 (44.4%) of caregivers were informed about the

Table 2. Health facility related characteristics of the respondents who visited under-five clinic at the health centers of Kamba district, Southern Ethiopia, 2022.

Variables (n=385)	Response	Frequency	Percentage (%)
Medicines prescribed	Yes	357	92.7
	No	28	7.3
Received prescribed medications	Received all medications	138	39
	Received some medications	219	61
Access to water in the health facility	Yes	369	95.8
	No	16	4.2
Received laboratory services	Yes	128	33.2
	No	257	66.8
Any medication given to the child at the facility	Yes	95	24.7
	No	290	75.3
Recommend health facility for others	Yes	312	81
	No	73	19

Table 3. Provider related characteristics of caretakers who visited under-five clinics at the health centers of Kamba district, Southern Ethiopia, 2022.

Variables (n=385)	Response	Frequency	Percentage (%)
Explanation given on how to give the medications	Yes	368	95.6
	No	17	4.4
Care givers were informed about diagnosis of the current illness	Yes	171	44.4
	No	214	55.6
Provider showed respect for the care givers	Yes	353	91.7
	No	32	8.3
Physical examination performed for the child	Yes	357	92.7
	No	28	7.3
The sick child was weighed	Yes	263	68.3
	No	122	31.7
Care giver was counseled about child feeding	Yes	266	69
	No	119	31
Provider informed the care giver when to revisit	Yes	230	59.7
	No	155	40.3

name of the illness that the child had. Among respondents, 353 (91.7%) of caregivers received good respect from their provider during greeting. The majority, 357 (92.7%), of children who visited the under-five outpatient department were physically examined, and 263 (68.3%) were weighed at the time of their visit. The majority, 266 (69%) of caregivers, were advised to feed the child even when the child was not sick. Concerning information for revisit, more than half (59.7%) of the caregivers were informed of the signs and symptoms that would necessitate an immediate return to a health facility. Out of those symptoms, 70 (30.4%) and 25 (10.9%) respondents were informed if symptoms became worse and poor (not eating or drinking), respectively. Out of the respondents that advised bringing the child back to the health centers for no emergency reasons, 110 (47.8%) and 25 (10.9%) of them were for follow-up and immunization, respectively (Table 3).

Caregivers' satisfaction with IMNCI services provision

The overall satisfaction was computed by taking the sum of the 11 satisfaction items. The maximum and minimum calculated total satisfaction scores were 55 and 33, respectively. Accordingly, the threshold value (75% of 55) for the caregivers' satisfaction was found to be 41. Based on this, a total of 269 (70%) [95% CI:

65.8-74] of the caregivers scored a satisfaction score above 41 and were categorized as satisfied, and the remaining 116 (30%) scored 41 and below and were categorized as "dissatisfied" with the overall IMNCI service provision (Table 4 and Figure 1).

Factors associated with caregivers' satisfaction

A bivariate logistic regression analysis was conducted to detect the presence of an association between each independent variable and the overall satisfaction of caregivers with IMNCI services. The Hosmer and Lemeshow's test was used to check for the goodness-of-fit of the model, and its p-value was 0.39, which means that the model was a good fit. Fifteen variables were chosen for bivariate analysis and six candidate variables with a P-value of <0.25 were selected for multivariable analysis and used to assess statistical significance. Accordingly, age of the child, occupational status of the caretaker, marital status of the caretaker, receiving prescribed medicine from the health facility, receiving laboratory service, receiving any dose of drug in the facility, and telling the name of the child's illness to the caretaker were found to be the candidate variables for multivariable analysis.

The multivariable logistic regression analysis showed that receiving prescribed medicines from the health facility, receiving

Table 4. Caretakers satisfaction on the IMNCI service provision at the health centers of Kamba district, Southern Ethiopia, 2022.

Statements (n=385)	Very Dissatisfied (n/%)	Dissatisfied (n/%)	Neutral (n/%)	Satisfied (n/%)	Very satisfied (n/%)
Time you waited to see a provider	7 (1.8)	35 (9.1)	13 (3.4)	226 (58.7)	104 (27)
Ability of the provider to discuss about the illness	8 (2)	31 (8.1)	19 (4.9)	199 (51.7)	128 (33.2)
Amount of explanation you received about the problem	9 (2.3)	16 (4.2)	17 (4.4)	196 (50.9)	147 (38.2)
Privacy from having others see the examination	10 (2.6)	23 (6)	19 (4.9)	212 (55)	121 (31.4)
Privacy from having others hear your consultation discussion	6 (1.6)	13 (3.4)	11 (2.9)	213 (55.3)	142 (36.9)
Availability of medicines at this facility	14 (3.6)	35 (9.1)	10 (2.6)	243 (63)	8 (21.6)
The opening hours of service at this facility	12 (3.1)	10 (2.6)	10 (2.6)	273 (70.9)	80 (20.8)
The number of days services are available to you	17 (4.4)	15 (3.9)	28 (7.3)	237 (61.6)	88 (22.9)
The cleanliness of the facility	7 (1.8)	9 (2.3)	14 (3.6)	271 (70.4)	84 (21.8)
How the staff treated you (respect from providers)	8 (2.1)	13 (3.4)	19 (4.9)	255 (66.2)	90 (23.4)
Price for services or treatments	8 (2)	14 (3.6)	14 (3.6)	242 (62.6)	107 (27.8)
Overall satisfaction	satisfied			269	70%
	unsatisfied			116	30%

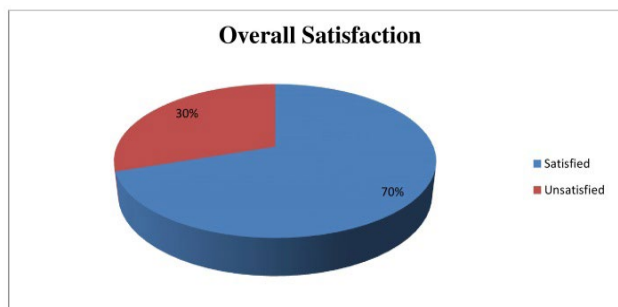


Figure 1 Overall satisfaction with IMNCI services among caretakers at health centers of Kamba District, Southern Ethiopia, 2022.

laboratory service, and telling the caretaker the diagnosis of the child's illness were found to have a statistically significant association with caregivers' satisfaction. Accordingly, caregivers who had received all prescribed medications from the health facility were 3.2 times, AOR=3.2; 95% CI (1.9-5.3) more likely to be satisfied as compared to those who had received some prescribed medications. Caregivers whose children received laboratory services were 3.7 times more likely to be satisfied when compared to their counterparts, AOR = 3.7; 95% CI (2.0-6.5). Those caregivers for whom the provider told the diagnosis of the child's illness were 2.1 times more likely to be satisfied as compared to their counterparts, AOR = 2.1; 95% CI (1.3-3.5 (Table 5).

Discussion

The aim of this study was to assess satisfaction and associated factors with IMNCI services among caregivers who visit the under-five outpatient departments in Kamba district, Southern Ethiopia's health centers.

According to the findings of this study, 70% of caregivers were satisfied with the IMNCI service provided. Receiving all the prescribed medicines from the health facility, receiving laboratory service, and informing the caretaker about the child's illness were found to have a statistically significant relationship with caregivers'

satisfaction. According to this study, caregivers' satisfaction with IMNCI services was similar to the study conducted in Egypt, which found caregivers' satisfaction with IMNCI services to be 70.6% [19]. This could be due to the fact that the health facilities in both study areas provide similar services, IMNCI. However, the figure was lower than in Ethiopia [20], India [21], Malaysia [22], and Indonesia [23] where the figures were 80.5%, 79.3%, 90.5%, and 91.1%, respectively. A difference in the quality of IMNCI services provided in different districts, caregivers' expectations, and type of health facilities could be the reason for the observed difference. Another reason could be differences in the socioeconomic status of the study area, sample sizes, and study period [24,25].

This study revealed that caregivers who had received all prescribed medicines from the health facility were three times more likely to be satisfied as compared to those who had received prescribed medications partially. This finding was consistent with the findings of another cross-sectional study conducted in Ethiopia [23] This suggests that medication availability is a core element that makes patients satisfied with IMNCI services. Failure to get prescribed drugs due to poor availability of medications in health facilities can result in dissatisfaction and lead many caregivers to by-pass the closest public facilities to go to costlier private facilities [26,27].

Table 5. Multivariable analysis showing factors associated with caretakers' satisfaction on IMNCI services at health centers of Kamba district, Southern Ethiopia, 2022.

Variables	Responses	Overall Satisfaction		COR (95%,CI)	AOR (95%,CI)
		Satisfied (%)	Unsatisfied (%)		
Age of the child	<12 months	77 (79.4)	20 (20.6)	1.7 (0.8-3.7)	2.4 (0.9-6.4)
	12-24 months	102 (66.7)	51 (33.3)	0.9 (0.5-1.8)	0.9 (0.4-2.4)
	24-36 months	54 (65)	29 (35)	0.8 (0.4-1.7)	0.8 (0.3-2.2)
	>36 months	36 (69.2)	16 (30.8)	1	1
Occupational status	Housewife	192 (69.6)	82 (30.4)	0.65 (0.23-1.8)	0.7 (0.2-2.3)
	Farmer	32 (80)	8 (20)	1.1 (0.3-3.9)	1.5 (0.4-5.9)
	Gov't employee	27 (58.7)	19 (41.3)	0.4 (0.13-1.3)	0.4 (0.11-1.4)
	Merchant	18 (78.3)	5 (21.7)	1	1
Marital status	Married	236 (69.2)	105 (30.8)	1.9 (0.6-6.3)	2.9 (0.7-13)
	Single	15 (83.3)	3 (16.7)	4.2 (0.8-23)	7.7 (0.9-61)
	Divorce	12 (80)	3 (20)	3.3 (0.6-19)	0.78 (0.9-61)
	Widowed	6 (54.5)	5 (45.5)	1	1
Received prescribed medication	Received all medication	99 (72)	39 (28)	1.03 (1.01-4.4)	3.2 (1.9-5.3)*
	Received some medication	156 (71)	63 (29)	1	1
Received laboratory services	Yes	93 (72.7)	35 (27.3)	1.2 (1.1-6.3)	3.7 (2.0-6.5)*
	No	176 (68.5)	81 (31.5)	1	1
Provider told the name of child illness	Yes	128 (74.8)	43 (25.2)	1.5 (1.14-2.4)	2.1 (1.3-3.5)*
	No	141 (65.9)	73 (34.1)	1	1

COR =crude odds ratio; AOR=Adjusted odds ratio; *=Statistical significance

This study highlighted that receiving laboratory services was significantly associated with caregivers' satisfaction with IMNCI services. Caregivers whose children received laboratory services were 3.7 times more likely to be satisfied as compared to their counterparts. A study conducted in Jimma [10] showed that respondents that received laboratory services had higher perceived satisfaction scores. This might be due to the fact that patients might believe that laboratory investigation is necessary to accurately diagnose the child's illness.

Caregivers for whom the provider informed diagnosis of a child's illness were two times more likely to be satisfied than their counterparts. The reason for the higher magnitude of satisfaction among caregivers who knew the diagnosis of their children is that when parents are aware of their children's diagnosis, they might develop trust in the health system. This study showed that about 44.4% of the caregivers knew their child's illness. This finding was higher than the study done in Jigawa, Nigeria, where only 5.1% of caregivers knew about their child's illness [28]. The difference might be due to the differences in geographical areas covered and health system in the countries. But, finding from this study was lower than the study conducted in Jimma town, in which 59.6% of the caregivers knew their child's illness (10). The reason for this could be that high urban dwellers are better educated and more concerned about knowing the name of their child's illness than caregivers in our study who live in rural areas [29].

Only 95 (24.7%) of the children in this study received their first dose of medication at the facility before leaving. This result was lower than that of the Zimbabwe study, which was 50% and 34% in Botswana [30]. However, it was higher when compared to studies conducted in Iran and Dhaka, which indicate that none or one of the children received their first dose of medication

in the health facility A difference in the severity of the diseases while undergoing classification could be possible explanation. Those children who presented with severe or moderate disease classifications could receive any dose of medication in the facility, while those with mild conditions could not receive any medications before leaving. The other reason could be due to the client flow variation at health facilities; high client flow makes it difficult to manage all clients properly [5,15].

Limitations of the study

Social desirability bias could have been present because the client may have difficulty expressing dissatisfaction in the presence of the interviewer. Because it is possible that dis-satisfied caregivers might not come to health institutions. To minimize this, the interview was conducted in a separate room by a non-staff data collector.

Conclusions

This study showed that overall caregivers' satisfaction with integrated management of new-born and childhood illness services provided at the health centers in Kamba district was low as compared to earlier studies in the country. Receiving all prescribed medications from the health facility, receiving laboratory service, and being informed about the child's diagnosis were variables that had a statistically significant relationship with caregivers' satisfaction with IMNCI services. To improve the care takers' satisfaction with IMNCI services, health system at rural districts should ensure people-centered care and quality of IMNCI services.

Consent for Publication

Not applicable

Availability of Data and Materials

The data set from this study is held securely. Data and materials will be available upon request at anytime. You can contact the corresponding author

Competing Interests

The authors declare that they have not competing or conflicts of interest.

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