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Willingness to Blood Donation among the Residents of Bustos, Bulacan, Philippines: A Prevalence Study

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Abstract : This is a cross-sectional descriptive study where the researchers attempted to establish the respondents' willingness to blood donation. An interview schedule was devised in order to survey the information needed in this research undertaking. Four hundred forty six (446) individuals aged 18 to 65 years participated in this study.
The researchers administered the interview to the randomly selected individuals who conformed to the informed consent required from each barangay. The head of the household was preferred to be the interviewee. Data collected were recorded in a spreadsheet and uploaded in Stata MP version 14. Descriptive statistics were generated and survey data analysis module was used in estimating the proportions required.
The researchers were able to establish that about 48% (90% C.I.: 43.8, 51.3) of the residents of Bustos, Bulacan, Philippines who are aged 18 to 65 years are willing to donate blood within the next 3 months; Roughly 19% (90%C.I.: 16.3, 22.2) of the residents have ever-experienced donating blood; About 98.6% (90% C.I.: 97.4, 99.3) of the residents are aware that donating blood saves lives; About 83.55% (90 C.I.: 76.8, 88.6) of those who ever-experienced donating blood are willing to donate again; and The reason why a previous blood donor would inhibit himself from re-donating blood is because of existing health condition.
Keywords : blood donation, willingness and Bustos, Bulacan.

Introduction

"Blood, it's in you to give!"

One significant evidence of a progressive public health service in any barangay or society across all nations is the adequate supply of blood ready for donation. Incidents of blood and blood product shortages are perennial problems among hospitals, blood banks and health care units in the Philippines. Life-saving interventions for massive blood loss, blood replacement and reduction of mortality rates among those afflicted with haematological diseases all depend on an effective recruitment practice for possible blood donors that will eventually lead to an effective blood health care delivery system.

Developing the culture of blood-letting among Filipinos is one of the greatest challenges in maintaining

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a steady supply of blood for donation. Making the people aware that "blood letting is totally safe" is still a road block. The Philippine Red Cross avers that blood letting is quite a safe practice and a great opportunity to give the gift of life. However, traditional concerns of health, customs and idiosyncrasies have a profound effect on the willingness of Filipinos to participate in such a noble and humanitarian endeavor.

The study of Jemberu (2016) mentioned that dealing with a research undertaking with the same topic is profoundly pragmatic. Considering the magnitude and the gravity of the problem, finding few research papers in the area although might sound a little surprising. The result of their study, they professed, will be used in launching an appropriate motivational campaign in the field as there is no community based study conducted in Ethiopia. The aim of their study was thus to assess knowledge, attitude, and practice towards blood donation and its associated factors.

In Canada, Smith (2011) declares that despite extensive promotion to encourage blood donation, the donating population has remained consistently low at approximately 3% to 4% of the total Canadian population. These low rates of blood donation will likely result in future blood shortages as the demand for blood increases due to an aging population, the emergence of new medical and surgical procedures requiring blood transfusions, and further deferrals of individuals who pose a contamination risk to the blood supply.

The same study states that the previous social research on blood donation in Canada has found that altruistic personality traits are associated with a higher likelihood of donation. However, such research does not adequately explain why campaigns appealing to altruism have had limited success in significantly increasing blood donation rates. Using the concept of social capital, the same study conceptualized blood donation as a social phenomenon that is embedded in the context of community.

Hence, the present study attempted to establish the willingness to blood donation of the residents in Bustos which is a second class agricultural town in the province of Bulacan, Region III in the Philippines.

Objectives of the Study. The main problem of this study is: To determine the willingness to blood donation among the residents of Bustos, Bulacan, Philippines. Specifically, this study aimed to accomplish the following: **a**. Determine the proportion of the residents willing to donate blood within the next three months; **b**. Determine the proportion of residents who have ever-experienced donating blood; **c**. Characterize the respondents in terms of age, sex, educational attainment, religious affiliation, and average monthly income; **d**. Determine the proportion of residents who are aware that donating blood saves lives; **e**. Determine the proportion of residents who have ever-experienced donating blood still willing to donate blood within the next three months; and **f**. Identify the major reasons that inhibit a previous donor to re-donate blood.

Significance of the Study. This undertaking wished to establish the level of willingness of the people in Bustos, Bulacan to donate blood and the factors that may be linked on their refusal to be donors. Hence, this study will guide local government units, non-government units and health workers on the proper initiatives to take on whatever the result of this study would yield. This study is also deemed significant to curriculum planners, school administrators, teachers and parents. In their hands lies the greatest motivation to encourage possible blood donors. This study is also for benchmarking purposes, sources of inspiration documentation, reference and catharsis to other researchers who may be involved in the same realm of aspiration.

Methods and Techniques of the Study

The researchers used the cross-sectional descriptive design. This study attempted to establish the level of willingness to blood among the residents of Bustos, Bulacan, Philippines. The researchers prepared a 5-item interview schedule that would generate the needed information from the respondents. The 5-item questionnaire is shown below:

Interview Schedule (English Version)

Identifier:
Age:
Religious Affiliation:
Highest educational Attainment:
Average Monthly Income:

1. Are you willing to donate blood within the next 3 months?
2. Have you ever experienced donating blood? If no proceed to question 5.
3. Are you still willing to donate blood within the next 3 months? If yes proceed to question 5.
4. What is the primary reason that hinders you from donating blood within the next 3 months?

   a. painful experience
   b. fear of seeing blood or needle
   c. health condition
   d. religious beliefs
   e. family concern
   f. tattoo
   g. other

5. Are you aware donating blood saves life?

Population of the Study. The respondents of this study included the 446 households dispersed in 14 barangays in the Municipality of Bustos, Bulacan, Philippines. They were randomly sampled from the total 15945 households in this second-class agricultural municipality. Table 1 shows the respondents of this study.

Table 1 Respondents of the Study

Barangay	No of HH's	% allocation of sample size	No of HH's to be sampled
Bonga Mayor	1011	6.34	28
BongaMenor	1112	6.97	31
Buisan	474	2.97	13
Camachilihan	602	3.78	17
Cambaog	1354	8.49	38
Catacte	1585	9.94	44
Liciada	1079	6.77	30
Malamig	1443	9.05	40
Malawak	625	3.92	18
San Pedro	1565	9.81	44
Poblacion	1291	8.10	36
Talampas	892	5.59	25
Tanawan	716	4.49	20
Tibagan	2196	13.77	62
Total	15945	100.00	446

Data Gathering Procedure. The researchers administered the interview to the randomly selected individuals who conformed to the informed consent required from each barangay. The head of the household was preferred to be the interviewee. However, in the absence of the same, any individual 18 years old or over and is willing to provide consent may be interviewed. After clarification for questions regarding the respondents' participation, each was asked to sign the interviewee's informed consent form.

Statistical Analysis. Data collected were recorded in a spreadsheet and uploaded in Stata MP version 14. Descriptive statistics were generated and survey data analysis module was used in estimating the proportions required. Mean, frequencies and 90% confidence interval estimates were reported.

Results and Discussion

A total of 446 individuals participated in the study selected randomly from all the 14 barangays of Bustos.

Specific Objective 1: Determine the proportion of residents willing to donate blood within the next three months.

```
(running proportion on estimation sample)
 Survey: Proportion estimation
Number of strata =      14       Number of obs   =       446
Number of PSUs   =     428       Population size =  15,945.02
                          Design df       =       414
 --------------------------------------------------------------
          |           Linearized
          | Proportion   Std. Err.     [90% Conf. Interval]
----------+---------------------------------------------------
q1        |
no |   .5244703   .0228551     .4867249    .5619383
yes |   .4755297   .0228551     .4380617    .5132751
--------------------------------------------------------------
```

It can be gleaned from the tabulation above that: About 48% (90% C.I.: 43.8, 51.3) of the residents of Bustos aged 18 to 65 years, or 5 in every 10 individuals are willing to donate blood within the next 3 months.

In the study of Holdershaw, et.al. (2003) entitled Predicting Willingness to Donate Blood in New Zealand, it was that approximately 4% of New Zealand's total population donate blood, yet up to 20% may need to receive donated blood or blood products. The study also states there has been little success in accurately predicting willingness to donate blood, and greater knowledge is needed of those variables most likely to predict potential donors' behaviour, so that efforts to increase the number of blood donors can be effectively directed.

This study compared the predictive ability of Ajzen's theory of planned behaviour, based on the measurement of attitudinal variables, and Labaw's behavioural approach, in the context of willingness to donate blood. The findings indicated attitudinal variables were better predictors of behavioural intentions but a behavioural approach better predicted reported donation behaviour. This result provides support for further study of the framework proposed by Labaw.

On the other hand, Pule (2014) conducted a study on Factors Associated with Intention to Donate Blood: Sociodemographic and Past Experience Variables. This study was conducted to assess the level of intention of the general public towards blood donation and the factors associated with it. A descriptive cross-sectional study was conducted in South-East Botswana amongst participants aged 21–65 years. An interviewer-administered questionnaire was completed for 384 participants. The study found that of the 384 participants, 104 (27.1%) reported that they had donated blood in the past and 269 (70.1%) stated that they were willing to donate blood in the future which is higher that the willingness of the respondents in the present study. Thirteen out of the 104 past donors (12.5%) reported that they had donated blood in the 12 months preceding the survey and only 10 (9.6%) participants reported that they have been regular donors.

Specific Objective 2: Determine the proportion of residents who have ever-experienced donating blood.

```
. svy: prop q2, l(90)
(running proportion on estimation sample)

Survey: Proportion estimation

Number of strata =      14       Number of obs   =       446
Number of PSUs   =     428       Population size =  15,945.02
                          Design df       =       414
--------------------------------------------------------------
          |           Linearized
          | Proportion   Std. Err.     [90% Conf. Interval]
----------+---------------------------------------------------
q2        |
no |   .8094452    .017878     .7782213    .8371928
yes |   .1905548    .017878     .1628072    .2217787
--------------------------------------------------------------
```

It can be gleaned from the computation above that: Roughly 19% (90%C.I.: 16.3, 22.2) of the residents. Or 2 in every 10 individuals have ever-experienced donating blood.

TscheulinandLindenmeier (2015) declared in their study entitled The Willingness to DonateBlood: An Empirical Analysis of Socio-demographic and Motivation-Related Determinants in Germany that thewillingnesstodonateblood in their countryisnotveryhighamonglargepartsofthepopulation. Potentiallyimportant socio-demographicandmotivation-relatedvariables areparticularlyaffectingthewillingness todonateblood.

As an addition to the existing literature, the influence of the individual importance of structural characteristics of blood donation facilities, such as the standard of the facility's medical equipment or the training of the facility's staff, will be tested for its effects on the willingness to donate blood. The results of the study indicate that typical blood donors are young women or men who are studying or possessa higher level of education. Further more potential blood donor scan easily beat tracted by Pecuniary incentives and word of mouth. Unlikenon-donors, potential blood donorsare notidle, haven of ear of infections due to the donation and want reasonable opening hours of blood donation facilities.

Specific Objective 3: Characterize the respondents in terms of age, educational attainment, religious affiliation, and average monthly income.

Table 2 : Distribution of Respondents according to Age

agegrp	Freq.	Percent	Cum.
18 to 25 yrs old	57	12.78	12.78
26 to 35 yrs old	112	25.11	37.89
36 to 45 yrs old	127	28.48	66.37
46 to 55 yrs old	97	21.75	88.12
56 to 65 yrs old	53	11.88	100.00
Tot	446	100.00	

The table indicates that the majority of the respondents used in this study are aged 36 to 45 years old. They amount to almost 25%. On the other hand, 11.88% of the respondents used in this study are aged between 56 to 65. The mean age of respondents is 40.23 years (sd of 11.6 years).

The figure below showcases a graphic representation of the distribution of respondents according to age.

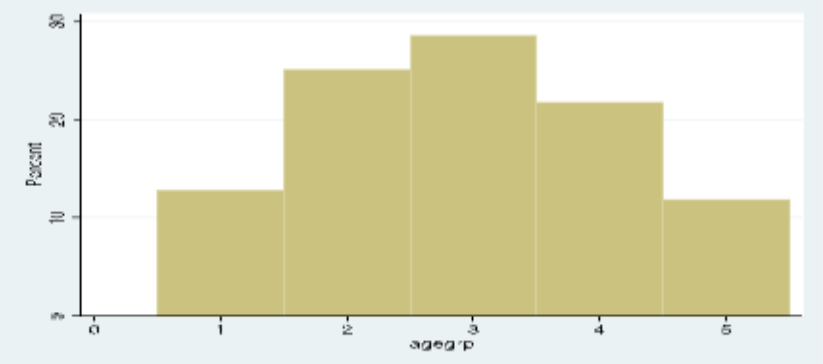

Figure 1. Distribution of the Respondents according to Age

Table 3 : Distribution of Respondents according to Educational Attainment

Educational Attainment	Freq.	Percent	Cum.
none	1	0.22	0.22
some elementary	25	5.61	5.83
elementary graduate	73	16.37	22.20
some high school	48	10.76	32.96
high school graduate	170	38.12	71.08
some college	47	10.54	81.61
college graduate	65	14.57	96.19
vocational	16	3.59	99.78
graduate studies	1	0.22	100.00
Total	446	100.00	

The table reveals that majority of the respondents in this study or 38.12% are high school graduates. This can be explained since the town is mostly agricultural. Furthermore, a closer look at the table will also indicate that 14.57% of the respondents are college graduates. On the other hand, 16.37% of the respondents are elementary graduates, while .22% of the respondents are either possessing advance education or no education at all.

The figure below showcases a graphic representation of the distribution of respondents according to educational attainment.

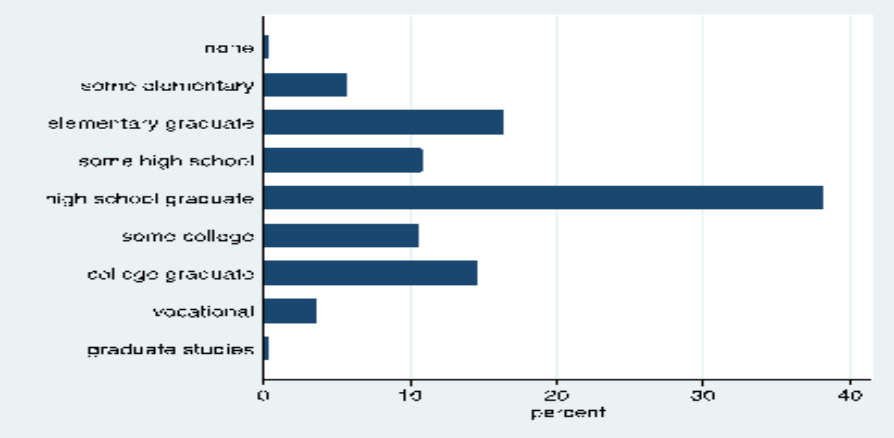

Figure 2. Distribution of Respondents according to Educational Attainment

Table 4 : Distribution of Respondents according to Average Monthly Income

incomegrp	Freq.	Percent	Cum.
not stated	74	16.59	16.59
below PhP1000	2	0.45	17.04
PhP1001 to PhP10000	316	70.85	87.89
PhP10001 to PhP20000	47	10.54	98.43
PhP20001 to PhP30000	2	0.45	98.88
over PhP30000	5	1.12	100.00
Total	446	100.00	

The table above provides that majority of the respondents in this study or 70.85% are earning an average monthly income between PhP1001 to PhP10000. On the other hand, 0.45% of the respondents are

either earning a wage bracket of PhP20001 to Php30000 or below PhP1000. Five respondents or 1.12% are earning over PhP30000.

The figure below showcases a graphic representation of the distribution of respondents according to average monthly income.

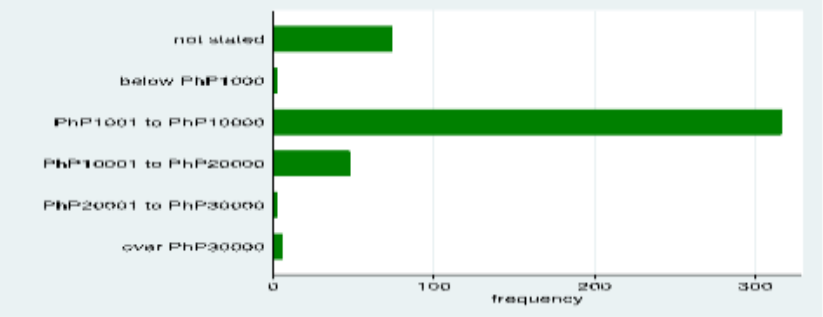

Figure 3. Distribution of Respondents According to Monthly Income

Table 5 : Distribution of Respondents according to Religious Affiliation

Religion	Freq.	Percent	Cum.
Roman Catholic	391	87.67	87.67
Protestant	1	0.22	87.89
Born Again Christian	28	6.28	94.17
Iglesiani Cristo	16	3.59	97.76
Jehovah's Witness	3	0.67	98.43
Islam	1	0.22	98.65
Latter Day Saints	4	0.90	99.55
Others	2	0.45	100.00
Total	446	100.00	

It can be gleaned from the table that 87.67% of the respondents are Roman Catholic. This is understandable since the Philippines is a predominantly Catholic lead nation. A closer look at the table would reveal that 6.28% of the respondents in this study belong to the Born-Again Christian religious denomination. Least of the respondents or 0.22% are either Protestants or Muslims. The Jehovah's Witnesses, who are known to have included in their beliefs their disapproval to blood transfusion and blood donation comprised 0.67% of the respondents. The figure below showcases a graphic representation of the distribution of respondents according to religion.

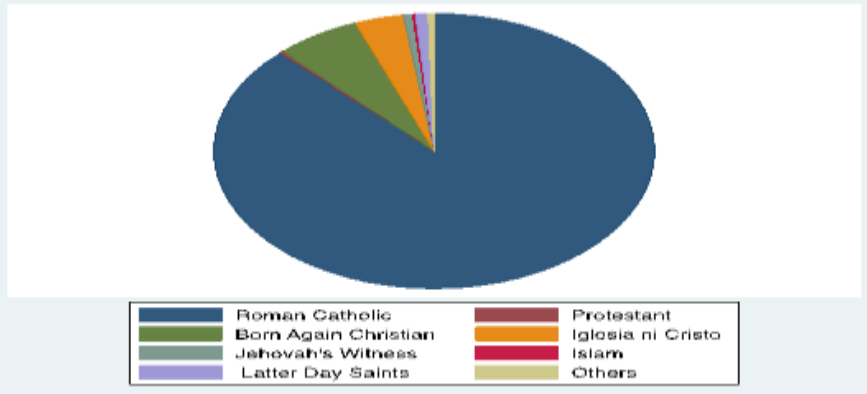

Figure 4. Distribution of Respondents according to Religion

Table 6: Distribution of Respondents according to Number of Years Residing in Bustos

yrsgrp	Freq.	Percent	Cum.
1 year	6	1.35	1.35
2 to 5 yrs	26	5.83	7.17
6 to 15 yrs	62	13.90	21.08
16 to 20 yrs	41	9.19	30.27
21 to 30 yrs	102	22.87	53.14
more than 30 yrs	209	46.86	100.00
Total	446	100.00	

The table above shows that 48.86% of the respondents have been residents of Bustos, Bulacan for more than 30 years. While 22.87% of the respondents in this study have been residents of the same town for 21 to 30 years. On the other hand, 1.35% of the respondents are residents of the place for just a year. The median number of years of residence in Bustos is 30 years (IQR of 26). The figure below showcases a graphic representation of the distribution of respondents according to the number of years residing in Bustos.

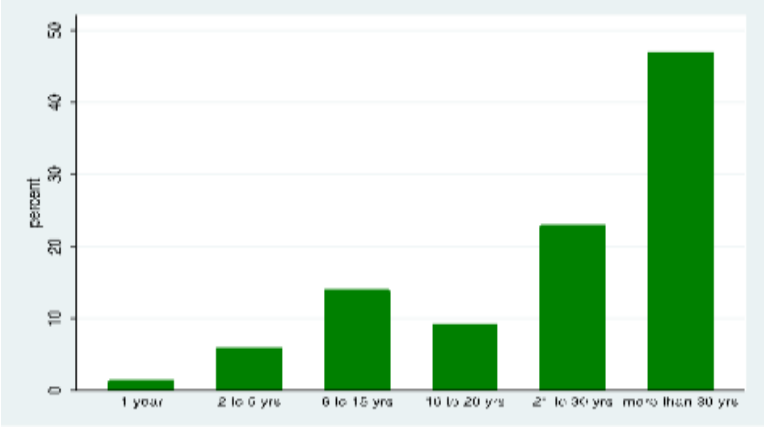

Figure 5. Distribution of Respondents According to the Number of Years Residing in Bustos

Specific Objective 4: Determine the proportion of residents who are aware that donating blood saves;

Number of strata = 14 Number of obs = 446
Number of PSUs = 428 Population size = 15,945.02
Design df = 414

	Linearized		
	Proportion	Std. Err.	[90% Conf. Interval]
q5			
no	.013539	.0053477	.0070432 .0258698
yes	.986461	.0053477	.9741302 .9929568

It can be gleaned from the tabulation above that: Only 98.6% (90% C.I.: 97.4, 99.3) of the residents or 9 in every 10 individuals are aware that donating blood saves lives.

Such a great figure reveals the profound understanding of the respondents in the study on the importance of blood-letting and blood donation. Everyday blood transfusions take place that save lives of many people all over the world. Organic Facts (2017) writes that donating blood can help in treating patients suffering from cancer, bleeding disorders, chronic anemia associated with cancer, sickle cell anemia and other hereditary blood abnormalities.

The same site avers that donating blood is good for health of donors as well as those who need it. It is important to know that human blood cannot be manufactured, people are the only source of it and that is why it is important to donate blood and help those who need it.

Health benefits of donating blood include good health, reduced risk of cancer and hemochromatosis. It helps in reducing risk of damage to liver and pancreas. Donating blood may help in improving cardiovascular health and reducing obesity.

Specific Objective 5: Determine the proportion among residents who have ever-experienced donating blood still willing to donate blood within the next three months; and

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Survey: Proportion estimation

Number of strata =     14        Number of obs   =        85
Number of PSUs   =     85        Population size =     3,038.4
                         Design df       =        71
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------------------------------------------------------------
             |             Linearized
             | Proportion   Std. Err.     [90% Conf. Interval]
-------------+----------------------------------------------
q3           |
no |   .1644418   .0353751     .1135858    .2321054
yes |   .8355582   .0353751     .7678946    .8864142
------------------------------------------------------------
```

It can be gleaned from the tabulation above that: Only 83.55% (90 C.I.: 76.8, 88.6) of those who ever-experienced donating blood are willing to donate again.

This is consistent with the declaration of the Municipal Health Officer of the town that those who are willing to donate blood are the same persons over again. This means that they are the "regular donors". Hence, there is a great need to reach out to other blood donors.

Specific Objective 6 : Identify the major reasons that inhibit a previous donor to re-donate blood.

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Q4 |      Freq.Percent        Cum.
-------------------------------+----------------------------------
painful |         4       25.00       25.00
fear of seeing blood or needle |         1        6.25       31.25
existing health condition |        11       68.75      100.00
-------------------------------+----------------------------------
                    Total |        16      100.00
```

It can be gleaned from the tabulation above that the most prominent reason why a previous blood donor would inhibit himself from re-donating blood is because of existing healthconditions. This is followed by the fear of pain they undergo in the process of blood donation. And the least of the respondents' reason is the phobia of seeing blood or needle.

These reasons are consistent with the reasons cited by the Miller-Keystone Blood Center (2017) stating the same as the main reasons why people are deterred from donating blood.

Conclusions

1. About 48% of the residents of Bustos, Bulacan aged 18 to 65 years are willing to donate blood within the next 3 months.
2. Roughly 19% of the residents have ever-experienced donating blood.
3. About 98.6% of the residents are aware that donating blood saves lives.
4. About 83.55% of those who ever-experienced donating blood are willing to donate again.
5. The reason why a previous blood donor would inhibit himself from re-donating blood is because of existing health condition.

Recommendations

In view of the foregoing, the following are recommended:

1. Blood donation campaign programs should be launched in order to heighten the residents' willingness to donate blood.
2. Effective information dissemination, targeting school children, about the importance of blood donation.
3. Similar study may be undertaken to verify the veracity of the results of the present study.

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