

Association of Socio-Demographic Factors, Social Determinants of Health and Weekly Physical Activity in an Urban Hospital in Northwest Indiana

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Introduction

- Engaging in regular physical activity and exercise has a proven beneficial effect on health outcomes by preventing chronic diseases, managing weight, and promoting overall physical and mental health^{3,2}
- The CDC recommends for the average person to take at least 2000 steps per day at a brisk pace, and in doing so every day should reach their 150 minutes of activity a week. These steps should be done in addition to one's normal step count, bringing the daily recommended step count to about 6000 steps per day.⁴
- It has been shown that an individual's access to safe public areas, income level, and access to food can affect their exercise levels.^{1,3}
- This study was a Community based participatory research (CBPR) partnership between SMMC and IUSM-NW



Research Question

What is the association between socio-demographic factors, social determinants of health and physical activity in an Urban Hospital Setting?

Materials & Methods

- Retrospective Study
- Data collection from Jan 2021- March 2023
- Patients were stratified into physical activity levels based upon published guidelines: inactive (no physical activity), insufficiently active (<150 minutes per week) or sufficiently active (≥150 minutes per week)³
- Tests of association:** Chi-Square, Kruskal-Wallis, Multivariate Ordinal Regression (p<0.05)
- IRB #14040 (Exempted 1/31/2022)

Results

Tables 1 Distribution of Participants' Health Behaviors Across Demographics and Social Determinants of Health

Variables	Inactive (# of patients)	Insufficiently Active (# of patients)	Sufficiently Active (# of patients)	Kruskal Wallis H	P value
Age Group				47.455	p<0.001
Under 18	0	2	1		
18-24	11	5	11		
25-39	48	57	32		
40-49	50	41	34		
50-64	235	83	68		
65-74	252	76	63		
75-older	286	101	42		
Ethnicity				1.81	0.178
Hispanic	78	33	33		
Non-Hispanic	804	332	218		
Race				10.751	0.057
American Indian	0	1	2		
Asian	0	2	1		
Black/African American	119	57	30		
White/Caucasian	695	275	191		
Pacific Islander/Native Hawaiian	1	0	0		
Other	64	30	27		
Sex				7.414	0.006
Male	411	148	148		
Female	471	217	103		
Veterans				0.001	0.979
Veterans	103	31	28		
Non-Veterans	773	332	222		
Insurance Type				22.969	<.001
None	2	4	4		
Public	727	271	168		
Private	148	89	77		
Other	5	1	2		
Language				5.82	0.054
English	866	326	245		
Spanish	11	3	1		
Other	5	0	4		
Social Determinants of Health					
Family Income				12.119	0.202
Less than \$14,999.99	5	2	3		
\$15,000 to \$24,999.99	101	45	39		
\$25,000 to \$34,999.99	116	39	26		
\$35,000 to \$49,999.99	116	42	28		
\$50,000 to \$74,999.99	64	25	13		
\$75,000 to \$99,999.99	10	8	9		
\$100,000 to \$124,999.99	2	1	2		
\$125,000 to \$149,999.99	6	5	4		
\$150,000 to \$199,999.99	6	1	1		
\$200,000 to \$249,999.99	0	2	0		
\$250,000 to \$499,999.99	0	0	0		
Financial Resource Risk				0.887	0.642
Low	706	306	198		
Medium	72	32	27		
High	57	14	14		
Housing Risk				0.191	0.662
Low risk	587	237	168		
High risk	95	40	32		
Social Connections Risk				29.053	<.001
Socially Isolated	447	136	96		
Moderately Isolated	262	163	114		
Socially Integrated	2	2	2		
Food Insecurity				0.842	0.352
No food insecurity present	755	321	215		
Food insecurity present	53	19	16		
Stress Presence				0.642	0.423
No stress concern	591	258	182		
Stress concern present	209	76	50		
Cumulative Social Risk				1.243	0.537
Low	424	184	126		
Moderate	106	42	39		
High	3	3	1		

Results

Physical Activity Levels By Demographic characteristics (N= 1498)

Figure 1: Physical Activity Level by Age Group (p<0.001)

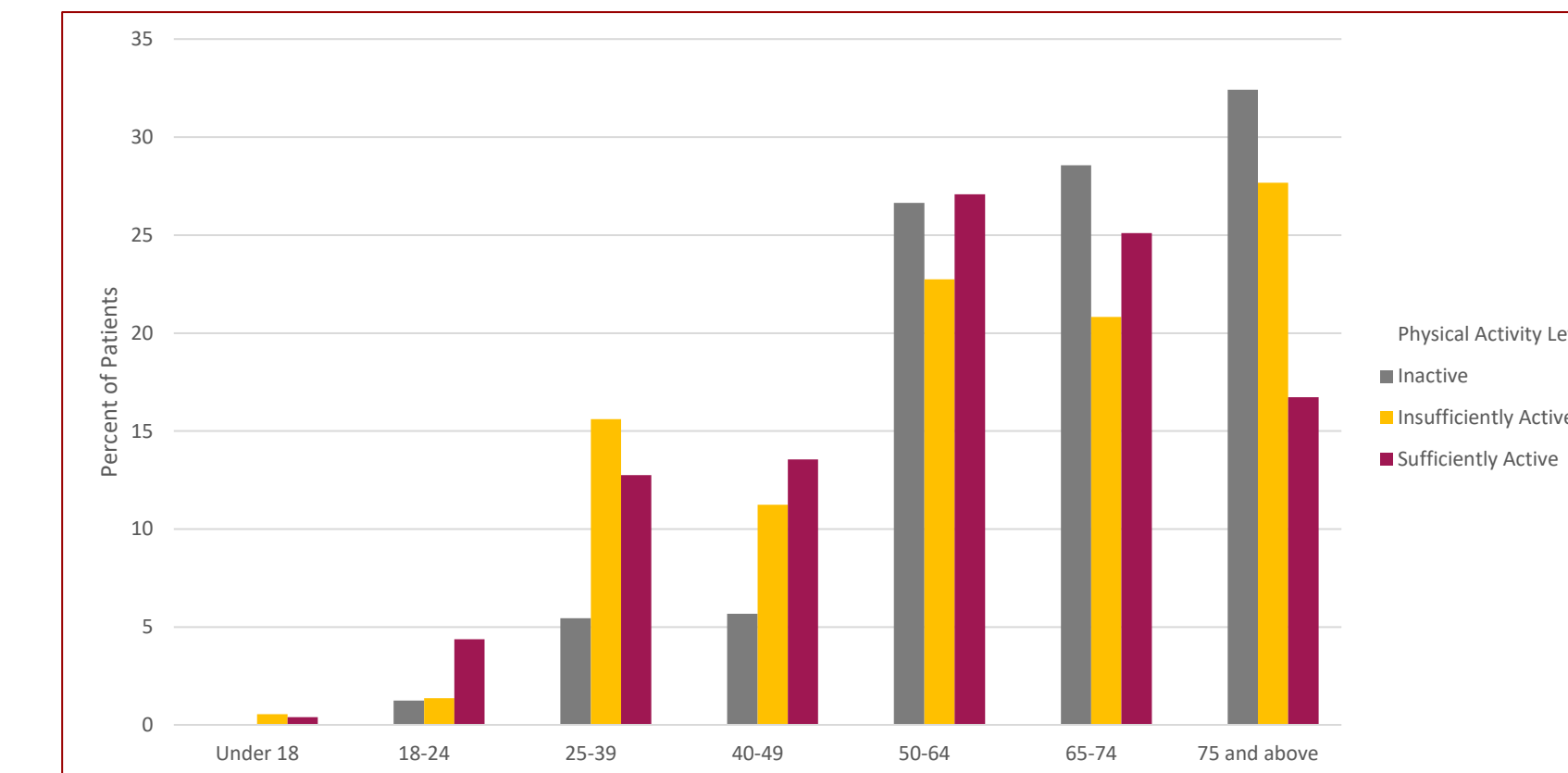


Figure 2: Physical Activity Level by Sex (p=.006)

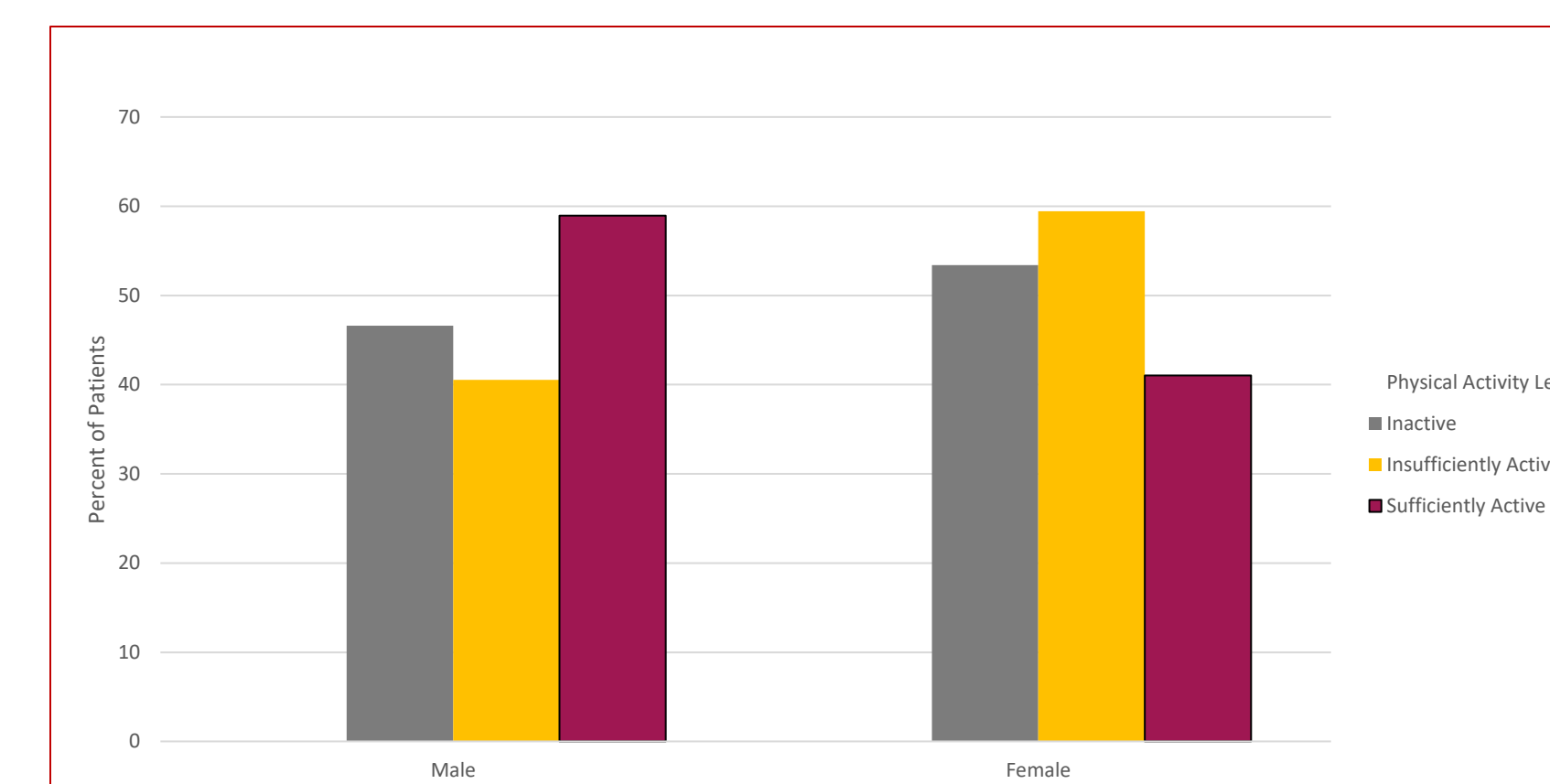


Figure 3: Physical Activity by Social Connection Risk (p<.001)

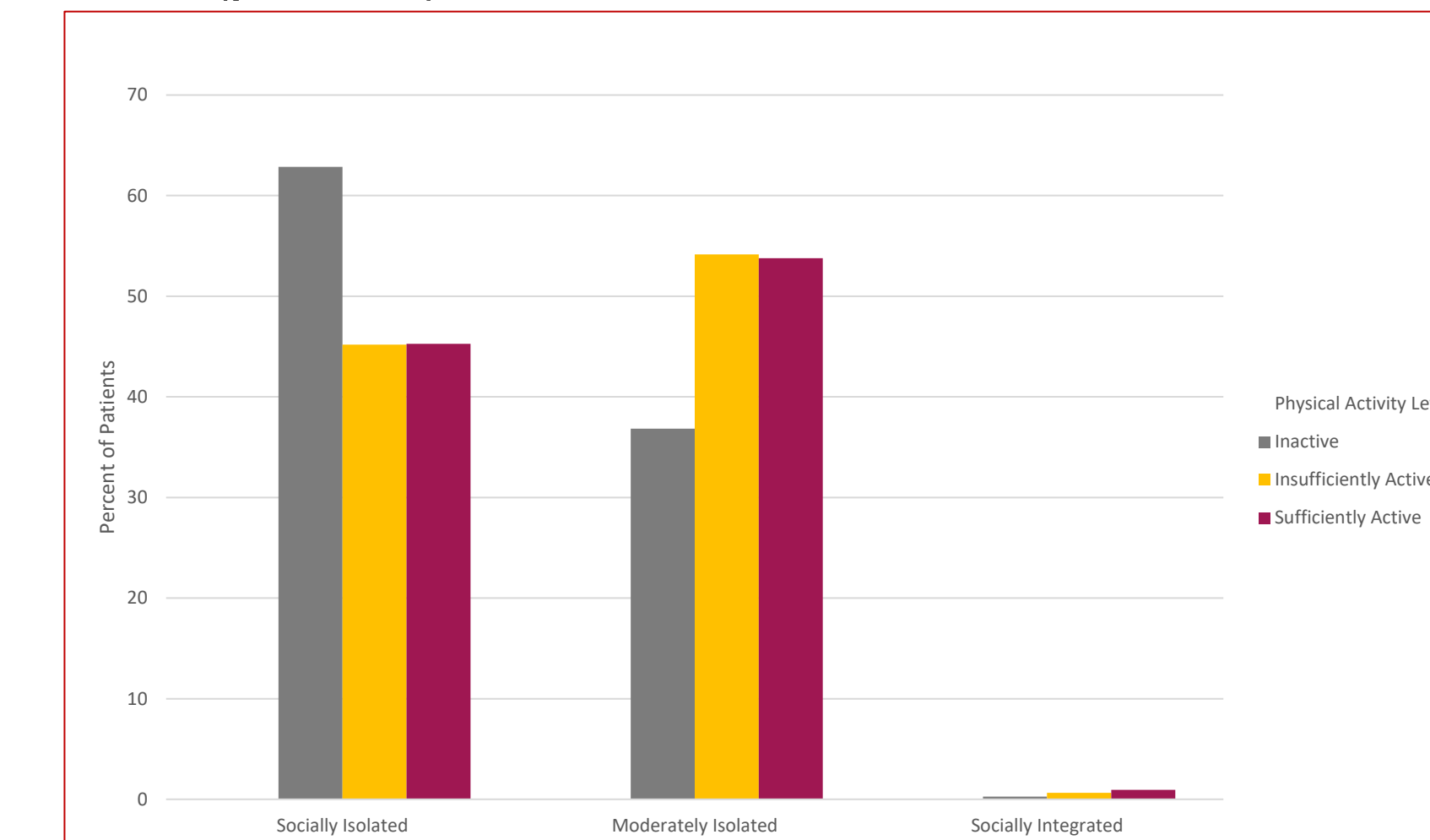
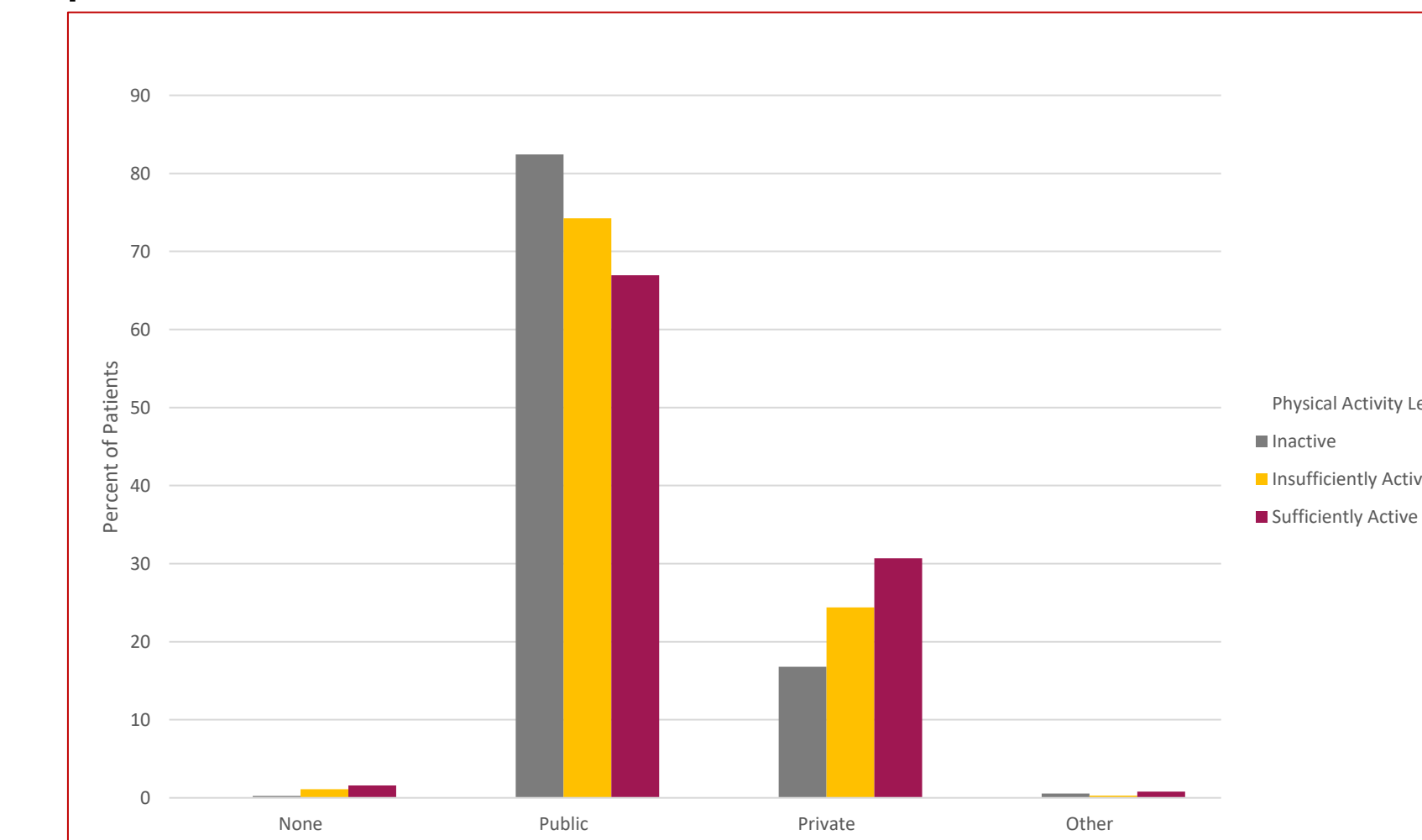


Figure 4: Physical Activity by Insurance type p<.001



Discussion

- Gender (p<0.001), Sex (p=.006), Social Connection Risk (p<0.001), and Insurance Type (p<0.001) were all significantly associated with low physical activity.
- Race (p=.057) and Language (p=.054) were both trending towards significance
- Multivariate analysis showed that age (p<0.001) was the only significant factor when accounting for all variables, with higher age groups reporting lower proportions of physically active individuals.

Conclusions & Future Directions

- This study showed in our Urban Hospital setting that certain socio-demographic factors and social determinants of health had significant associations with weekly physical activity levels
- This study complements other literature that both socio-demographic factors and SDOH can influence whether an individual engages in regular physical activity
- Knowing what subsets of patients are more at risk of being inactive or insufficiently active can inform physicians of which patients to direct to support/programs in the area so that they can reach daily activity goals.
- Future research can be done by determining what the patients consider physical activity and the types of physical activity people in the area are more likely and/or able to engage in.

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