

Background

- Health disparities exist in provision of and access to pharmacy services and medication management.¹⁻³
- A continued need to mitigate disparities in health outcomes exists, and there is an expanding body of literature regarding interventions to reduce health disparities.

Objective

- Summarize worldwide pharmacist-led interventions that were designed to reduce health disparities, with the ultimate aim of providing guidance on future research directions to advance health equity.

Methods

- Conducted a systematic literature review through multiple databases (PubMed, Scopus, Embase and CINAHL) from inception to Oct/2021.
- Included studies that assessed pharmacist-involved patient care interventions with the aim of reducing health disparities.
- Excluded pilot/preliminary studies and non-English language publications
- Two student investigator independently screened and extracted study data.
- Study characteristics, clinical areas, targeted patient population, and types of interventions and outcomes were evaluated.
- Descriptive statistics were performed.

Results

Table 1: Summary of Study Characteristics by Location (N=151 studies)

Characteristics	# of Studies (%)			
	US	Other High-Income countries	Middle/Low-Income countries	
Targeted Clinical Areas*	Cardiometabolic	59 (53.2)	9 (33.3)	
	Infectious	7 (6.3)	15 (55.6)	
	Vaccinations	5 (4.5)	0 (0)	
	Respiratory	7 (6.3)	1 (3.7)	
	Psychiatric	8 (7.2)	0 (0)	
	Oncologic	1 (0.9)	0 (0)	
	Others	13 (11.7)	2 (7.4)	
	Non-specific	22 (19.8)	0 (0)	
	Targeted Populations*	Rural	32 (28.8)	24 (88.9)
		Race/Ethnic	36 (32.4)	0(0)
African American		16 (14.4)	0(0)	
Hispanic		9 (8.1)	0(0)	
Non-specific minority		14 (12.6)	0(0)	
Others		4 (3.6)	0(0)	
Low-income, underserved, uninsured, homeless, FQHC		46 (41.4)	3 (11.1)	
Limited English proficiency, low-literacy		8 (7.2)	0(0)	
Gender/sex		0 (0)	1 (3.7)	
Disabled		2 (1.8)	0(0)	
Intervention Providers	Multidisciplinary	80 (72.1)	16 (59.3)	
	Student pharmacists	15 (13.5)	3 (11.1)	
	Medication management	75 (67.6)	13 (48.1)	
	Education, counseling	54 (48.6)	11 (40.7)	
	Vaccination	5 (4.5)	0(0)	
	Telehealth, remote care	17 (15.3)	2 (7.4)	
	Screening, health fair, outreach	23 (20.7)	7 (25.9)	
	Home visiting, long-term care facilities	5 (4.5)	0 (0)	
	Prescription labels	4 (3.6)	0 (0)	
	Others	54 (48.6)	0 (0)	
Type of Outcomes*	Medication utilization	25 (22.5)	11 (40.7)	
	Healthcare utilization	15 (13.5)	2 (7.4)	
	Laboratory values	47 (42.3)	6 (22.2)	
	Clinical events	12 (10.8)	2 (7.4)	
	Medication adherence	18 (16.2)	6 (22.2)	
	Adverse drug reactions	1 (0.9)	0 (0)	
	Humanistic outcomes	8 (7.2)	2 (7.4)	
	Knowledge, literacy	7 (6.3)	3 (11.1)	
	Economic analysis	12 (10.8)	1 (3.7)	

*Total percentages may be >100% because some studies targeted multiple variables.

Table 2: Summary of Study Characteristics

	Characteristics	# of Studies (%)
Study Location	High-income countries	124 (82.1)
	• US	111 (73.5)
	• Other High-income countries	13 (8.6)
	Middle- to low-income countries	27 (17.9)
Study Design	Randomized controlled trial	41 (27.2)
	Non-randomized study	110 (72.8)

Figure 1: Number of Publications per Year

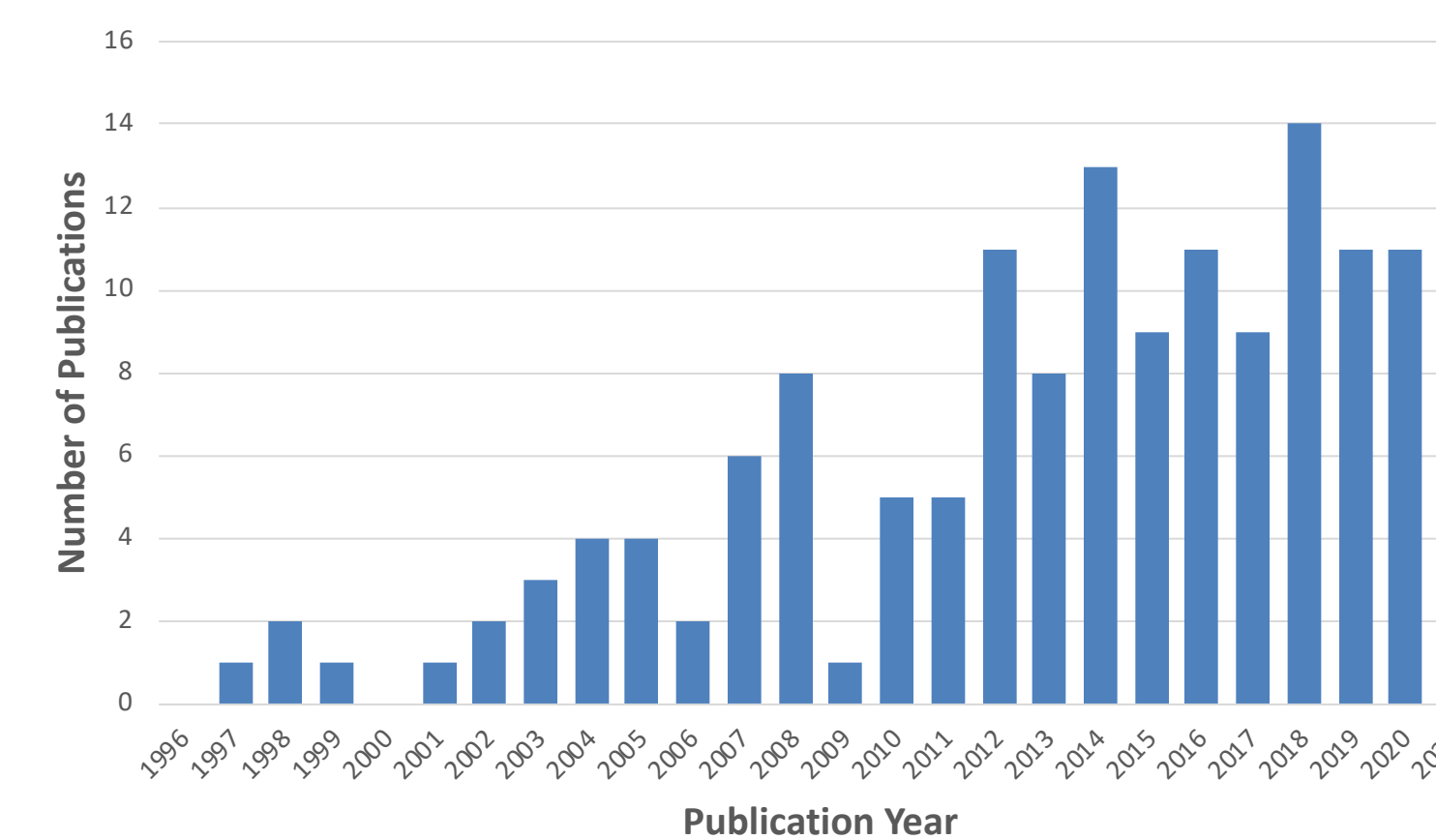
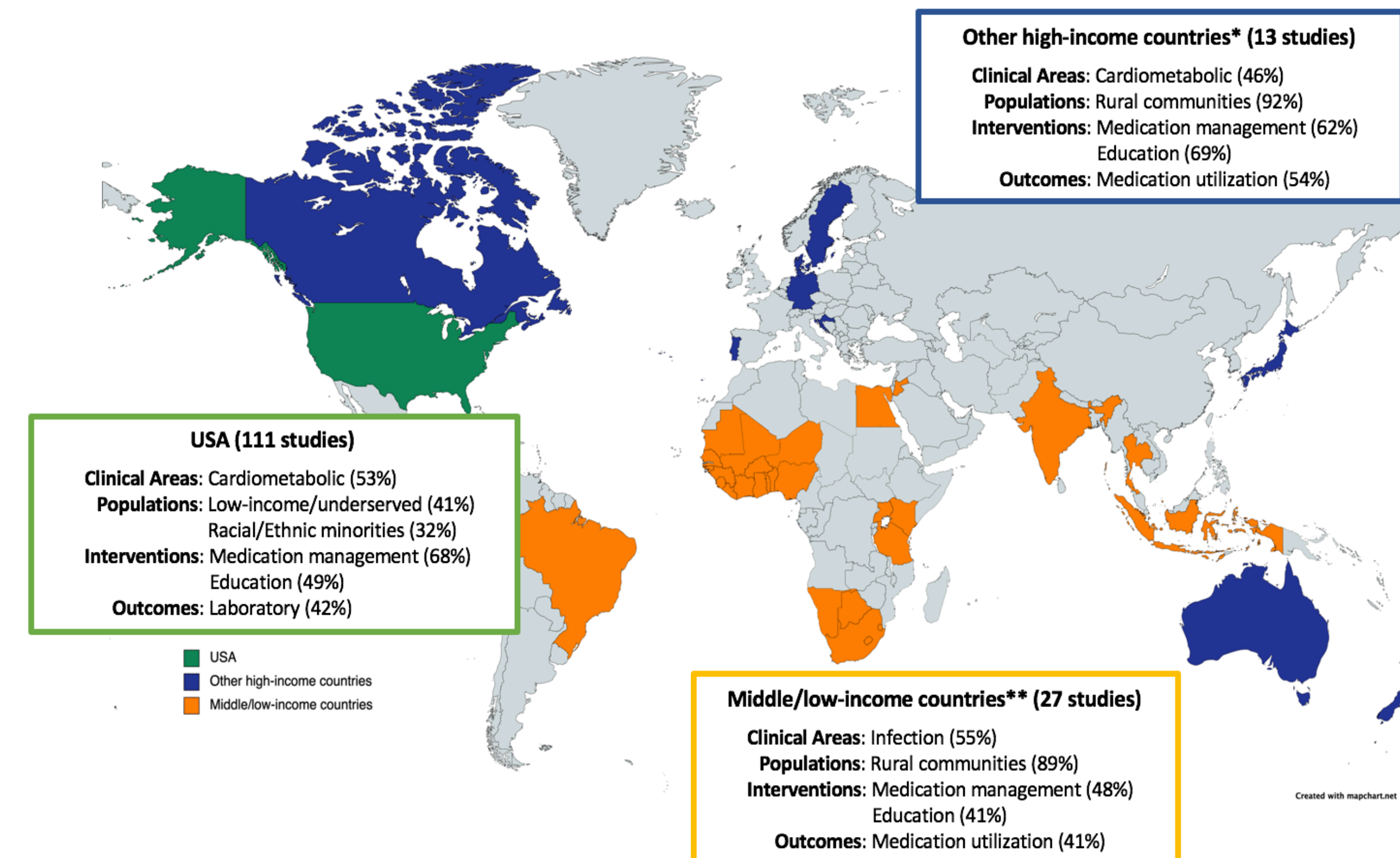
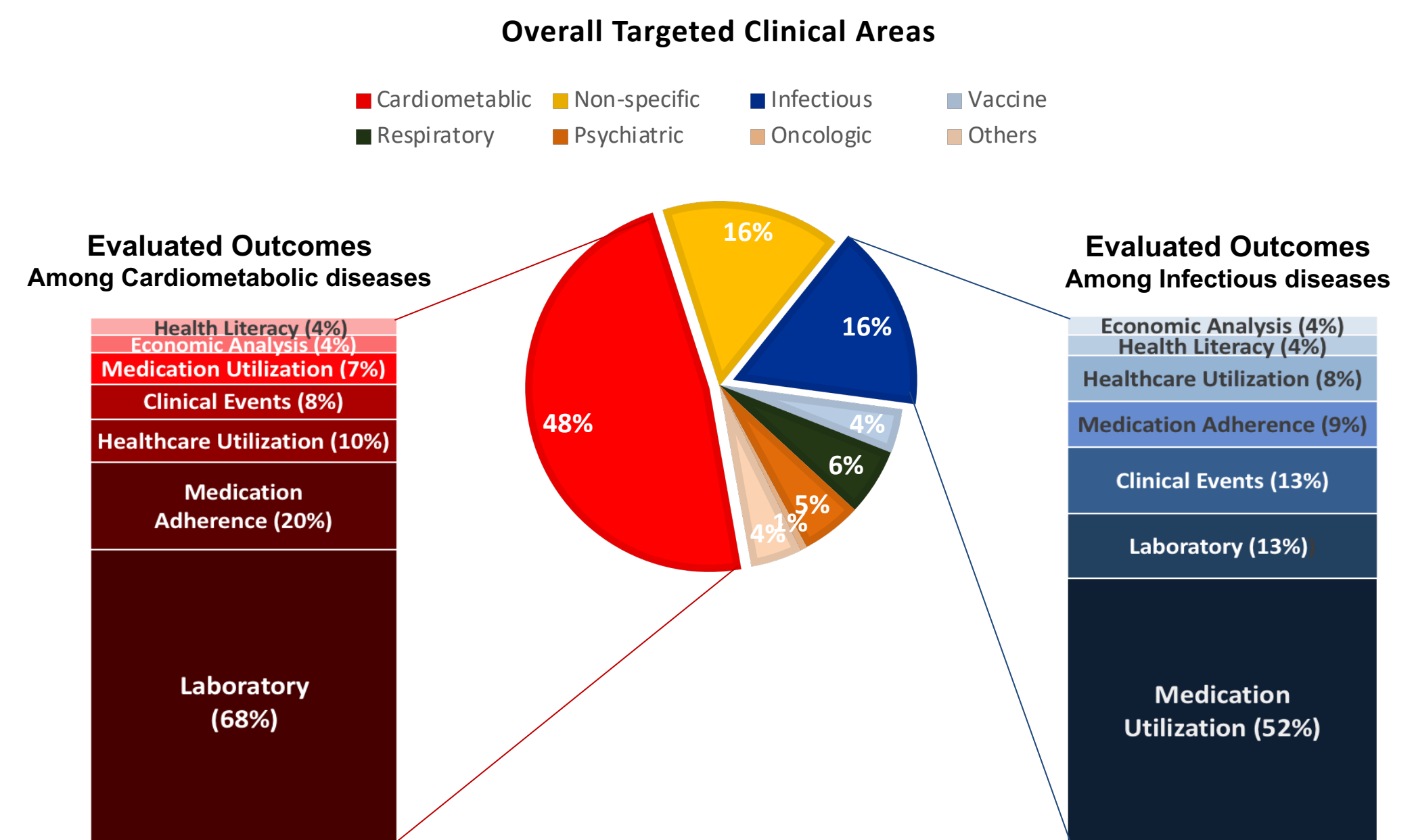


Figure 2: Characteristics of Frequently Implemented Interventions by Location



* Other high-income countries: Australia, Canada, Croatia, Denmark, Germany, Japan, New Zealand, Portugal, Sweden
 ** Middle/low-income countries: Brazil, Egypt, India, Indonesia, Jordan, Kenya, Peru, South Africa, Tanzania, Thailand, Uganda, West Africa

Figure 3: Targeted Clinical Areas and Outcomes in Pharmacist-delivered Interventions



Discussion

- There is a relative lack of non-US based studies and distinct variability in targeted clinical areas related to countries' income status.
- Global collaboration is needed especially for infectious disease management.
- Notably, we found limited interventions targeting racial/ethnic minorities other than African American and Latinx. Very few interventions targeted gender- or sex-based groups and patients with disabilities.
- Innovative services involving technology and culturally competent care provided by a multidisciplinary team are needed to increase capacity and optimize medication management and patient outcomes.

Conclusion

- Pharmacists have been involved in a variety of clinical interventions targeting a diverse range of patient populations, which unveiled pharmacists' roles in reducing health disparities.
- Variability of implemented interventions exists geographically and in certain populations where few interventions have been implemented, highlighting the need for further efforts to achieve equity in healthcare.

References

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Grant support: This study was supported by UCI Undergraduate Research Opportunities Program | Disclosures: Authors have no relevant financial relationships with commercial interests pertaining to the content presented on this poster.