

## INTRODUCTION

- Colorectal cancer (CRC) is the second leading cause of cancer death worldwide.
- The impact of social determinants of health (SDOH) and health behaviors has not been extensively examined among CRC survivors (CRCS).
- Given the importance of SDOH and diet in CRCS, it is essential to understand symptom experiences in order to provide holistic patient-centered care.

## PURPOSE

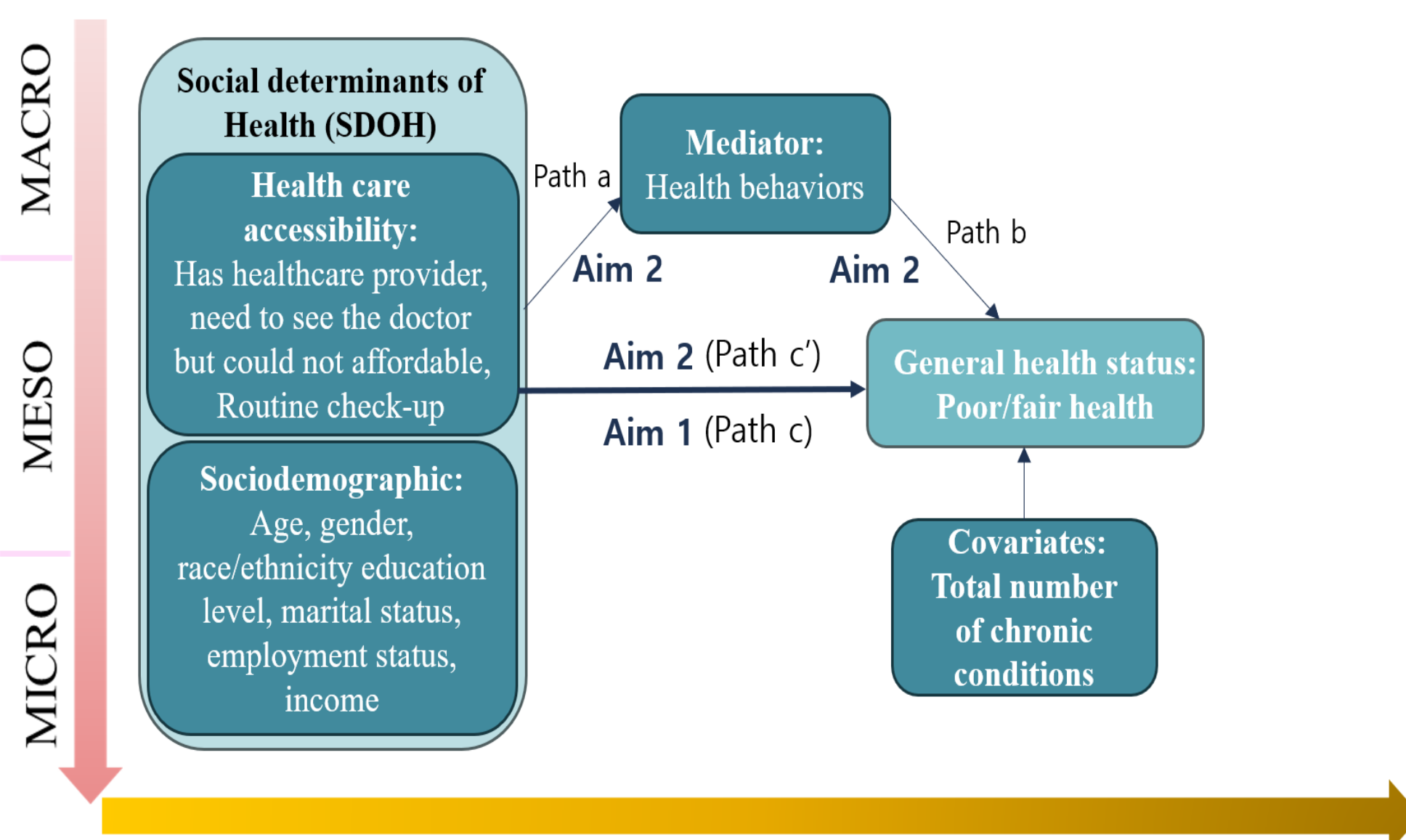
This study aims to investigate the association between SDOH, health behaviors and health status in CRCS.

### Specific aims:

- Identify SDOH related to general health, covarying for number of chronic conditions among CRCS.
- Determine whether number of health behaviors mediates identified SDOH-general health status relationships.

## FRAMEWORK

Integrative Social Determinants of Health Framework (Thimm-Kaiser et al, 2023) was revised for this framework.



## METHODS

- This cross-sectional study included data from 655 CRC survivors completing 2017, 2019, or 2021 Behavioral Risk Factor Surveillance System (BRFSS).
- SDOH were age, gender, race, education, marital status, employment, income, and measures of access to healthcare (healthcare provider, healthcare affordability, routine check-ups).
- The number of current health behaviors was derived from five indicators - daily fruit intake, daily vegetable intake, regular exercise, non-smoker, and non-user of alcohol (ranges from 0 to 5).
- A 5-point general health scale was used to determine poor/fair health was dichotomized (0= not poor/fair health, 1 = poor/fair health).
- Bivariate and multivariable logistic regression, with backward variable selection was examined covarying for number of chronic conditions for Aim 1.
- Path analysis was used to identify mediation effects for Aim 2.

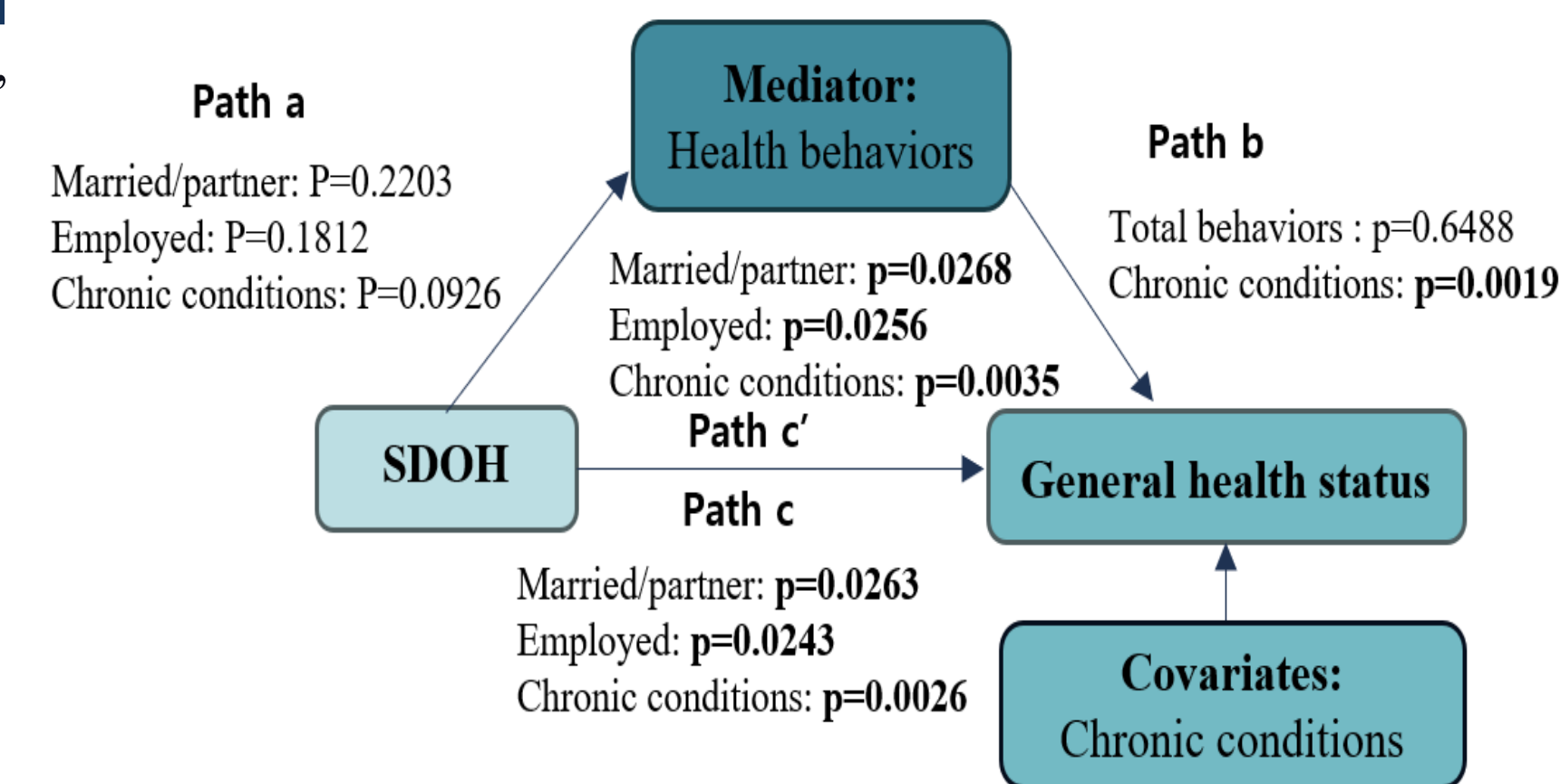
## RESULTS

- The sample was primarily older adults (80%), Non-Hispanic Whites (75%).
- Approximately 40% had two or more chronic conditions, 83% had three or more health behaviors, and 33% reported poor/fair health.
- The final reduced multivariable regression indicated the odds of poor/fair health were significantly greater among those not married/partnered, unemployed, and two or more chronic health conditions (Table 1).
- The number of health behaviors did not mediate the relationship of the two SDOH (marital status, employment) with general health, covarying for chronic conditions (Figure 1).

Table 1. Weighted Final Pragmatic Multivariable Logistic Regression Model

Explanatory variables	General health status		aOR	aOR 95%CI	P-value
	Not poor/fair health	Poor/fair health			
<b>Married/partner</b>	434	220			
Unmarried	193	119	1.895	1.079-3.329	<b>0.0263</b>
Married/partner (ref)	241	101			
<b>Employment status</b>	433	220			
Unemployed	305	176	1.918	1.089-3.379	<b>0.0243</b>
Employed (ref)	128	44			
<b>Chronic conditions (Covariate)</b>	434	221			
2 or more chronic health conditions	144	136	2.967	1.464-6.012	<b>0.0026</b>
One chronic health conditions	140	50	1.431	0.602-3.402	0.4163
No chronic health conditions (ref)	150	35			

Figure 1. Mediation analysis (no mediation effect)



## DISCUSSION

- Marital status and employment status are significant factors related to general health status.
- Chronic conditions are highly correlated with health status. Therefore, chronic condition should be treated as a covariate for the future research.
- Total number of health behaviors was not a mediator between SDOH and general health status.

## LIMITATIONS

- The population is relatively small compared to the whole population in BRFSS, and there are limited years of diet variables.
- There is a large missing value in insurance and gender identity, which are important parts of SDOH.
- Using the total number of health behaviors instead of health behavior subgroups.

## CONCLUSION

- Family support and socioeconomic factors are important social contributors to general health among CRC survivors.
- Further, understanding the influence of patterns of health behaviors can be used to design future interventions to improve the general health of CRC survivors.