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Background

Stage of Changes theories hypothesize that individual professionals and teams differ according to the "Stage" of their change, with different "Stages-of-Change" models offering theoretical assumptions about the steps that professionals or teams in health care must take to achieve the intended changes.

Stages-of-change theories state that the stages differ according to the professionals' and teams' awareness of and motivation to perform a specific behavior.¹ Each stage is governed by different factors and requires different strategies for change. Such theories naturally lead to the distinction of different subgroups or segments in a target group.²

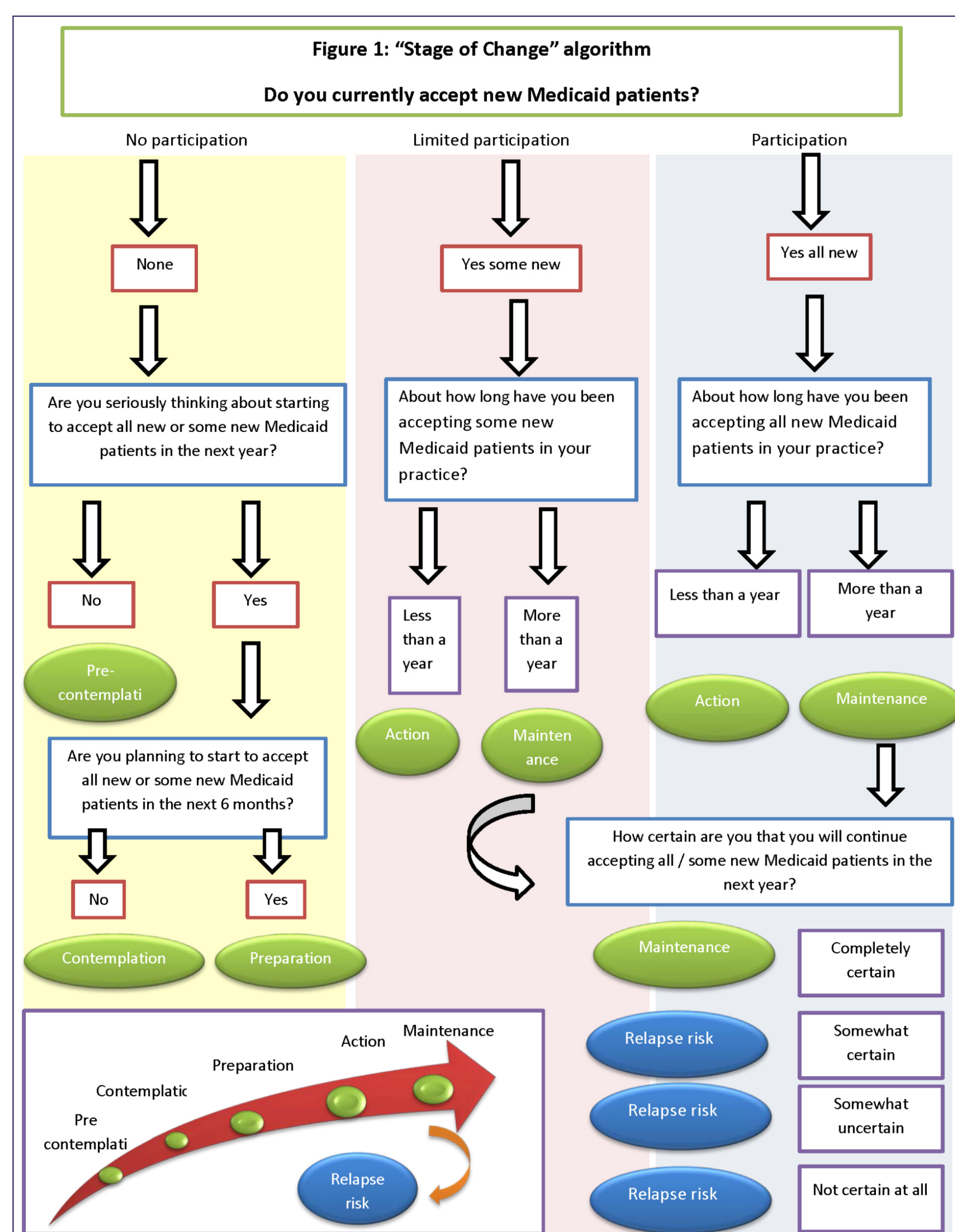
Accordingly, different theories have been used to explain dentists' Medicaid participation behavior, but most theories treat dentists as a homogenous group that shares the same determinants and motives to participate.² In contrast, a theoretical approach utilizing "Stages of Readiness to Change" hypothesizes that groups can be categorized according to their "Stage" of readiness to undertake a behavior.

Objective

This study uses "Stages of Readiness to Change" to segment general dentists in a Midwestern state into stages of readiness to participate in Medicaid.

Methods

Medicaid participation data for general dentists (N=514) from the 2013 Survey of Iowa Dentists were used to complete the "Stages of Readiness to Change" algorithm. (Figure 1)



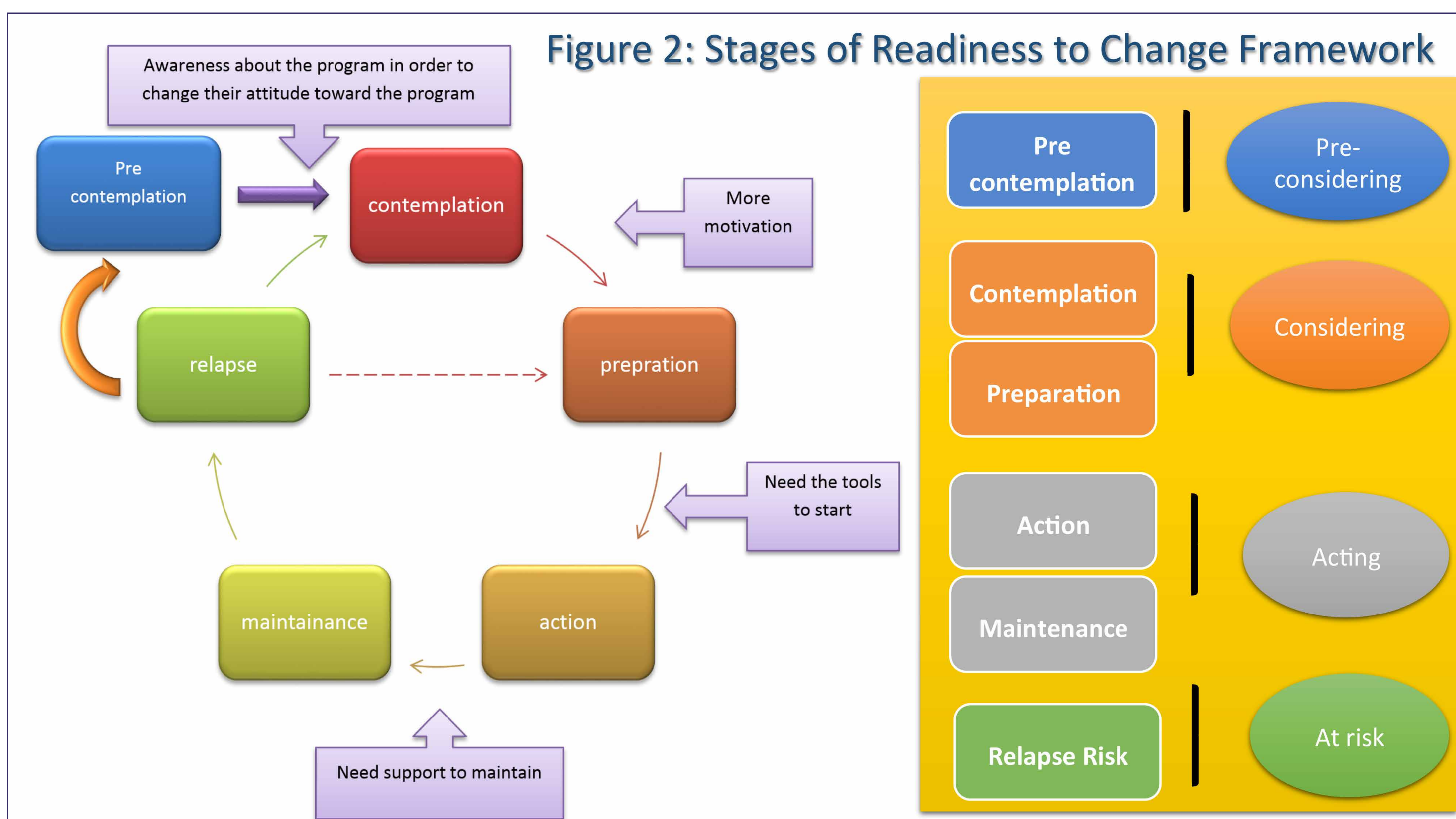
According to this algorithm, dentists were categorized in the six "Stages of Readiness to Change":³ Pre-contemplations, Contemplation, Preparation, Action, Maintenance, and Risk of Relapse. However, for statistical reasons, those 6 stages were collapsed into 4 main stages: 4,5

"Pre-considering": Pre-contemplation

"Considering": Contemplation + Preparation

"Acting": Action+ Maintenance

"At risk": Relapse risk



From a previous analysis of 2013 Survey of Iowa Dentists, we constructed 4 attitude scales, all scales were measured on 1-4 ordinal scale.⁶

Scale 1: 7 survey items measuring altruistic attitudes among dentists (a ¼ .77). Higher scores on this scale indicate more altruistic attitudes.

Scale 2: 4 survey items measuring dentists' attitudes about Medicaid enrollees (a ¼ .63). Higher scores on this scale indicated more positive attitudes toward the patient population.

Scale 3: 3 survey items measuring dentists' attitude toward administration of the Medicaid program (a ¼ .64). Higher scores indicated more positive attitudes about Medicaid administration.

Scale 4: 11 survey items measuring dentists' perceptions of problems with Medicaid (a ¼ .78). Higher scores indicated greater importance of problems presented.

Statistical Analysis:

Descriptive analysis of dentists in the 4 "Stages of Readiness to Change"

Demographic and attitude differences among the 4 stages were explored using ANOVA Test.

Results

Sample Characteristics:

In this analysis, we included dentists who were primarily responsible for making the decision whether their dental practice would accept Title 19 patients (N=514)

81% of our sample were males.

59% of respondents were older than 50 years. (Age Mean= 51 ±11.5)

64% were solo practitioners and have been for 20 ± 12 years in their current location

80% practices in Metropolitan areas and 14% in rural/small towns

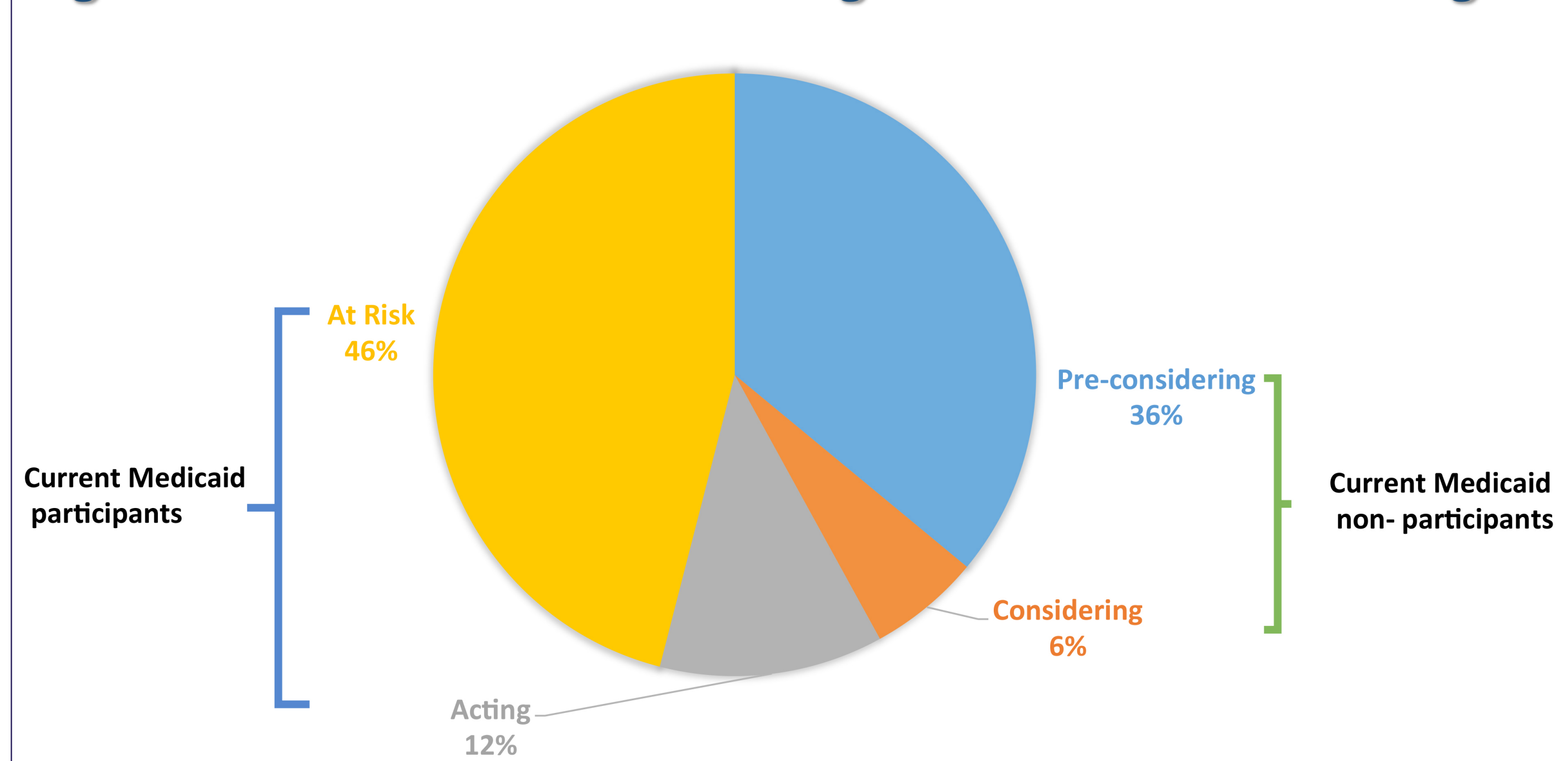
57% had comfortable workload and 24% were too busy and overworked

54% had a personal gross product more than \$ 500,000, with an average of \$ 34500 ± 10500 reimbursed from Medicaid in year 2011. (Min=0, Max=500,000)

An average of 10% ± 13 of practices' current patients were Title 19 (Min=0, Max=90%)

Distribution of dentists in the 4 Stages of Readiness to Change are shown in figure 3.

Figure 3: Dentists in Different Stages of Readiness to Change



Bivariate analysis:

Dependent variable: The 4 "Stages of Readiness to Change"

Independent variables:

1. Practice characteristics:

- ✓ Dentists in "Acting Stage" had more reimbursement money from Medicaid (M= \$ 84,000 ±10,000) during 2011 than dentists in "At risk" stage (M=52,000 ±7,000); F= 22.7, p<.0001.
- ✓ Dentists in "Acting" stage had more % of current Title 19 patients (M=21% ± 23) than dentists in "At risk" stage (M=13% ± 12), F=30, p<.0001.

2. Attitudinal Scales:

Current Participation Status	Four Stages of Change	Dentists Altruism Scale Mean	Overall ANOVA F-Test	Post-hoc Tukey test
Medicaid Non-participants	Pre-considering	2.4 ± 5	F=24, p<.001	1&2 → p=.006 1&3 → p<.0001 1&4 → p<.0001
	Considering	2.8 ± 3		2&1 → p=.006 2&3 → p=.329 2&4 → p=.999
Medicaid Participants	Acting	3.0 ± 5		3&1 → p<.0001 3&2 → p=.329 3&4 → p=.069
	At risk	2.8 ± 5		4&1 → p<.0001 4&2 → p=.999 4&3 → p=.069

Current Participation Status	Four Stages of Change	Attitude about Program Administration Scale Mean	Overall ANOVA F-Test	Post-hoc Tukey test
Medicaid Non-participants	Pre-considering	1.8 ± 7	F=15.2, p<.0001	1&2 → p=.512 1&3 → p<.0001 1&4 → p=.001
	Considering	2.0 ± 6		2&1 → p=.512 2&3 → p=.012 2&4 → p=.963
Medicaid Participants	Acting	2.5 ± 7		3&1 → p<.0001 3&2 → p=.012 3&4 → p=.0001
	At risk	2.0 ± 6		4&1 → p=.001 4&2 → p=.963 4&3 → p<.0001

Current Participation Status	Four Stages of Change	Attitude about Title 19 Patients Scale Mean	Overall ANOVA F-Test	Post-hoc Tukey test
Medicaid Non-participants	Pre-considering	2.5 ± 6	F=2.7, p<.048	1&2 → p=.532 1&3 → p=.296 1&4 → p=.824
	Considering	2.5 ± 6		2&1 → p=.532 2&3 → p=1.00 2&4 → p=.270
Medicaid Participants	Acting	2.6 ± 5		3&1 → p=.296 3&2 → p=1.00 3&4 → p=.078
	At risk	2.4 ± 6		4&1 → p=.824 4&2 → p=.270 4&3 → p=.078

Current Participation Status	Four Stages of Change	Perception of Importance of Medicaid Problems Scale Mean	Overall ANOVA F-Test	Post-hoc Tukey test
Medicaid Non-participants	Pre-considering	3.2 ± 5	F=12.8, p<.0001	1&2 → p=.1,00 1&3 → p<.0001 1&4 → p<.012
	Considering	3.2 ± 5		2&1 → p=1.00 2&3 → p<.0001 2&4 → p=.371
Medicaid Participants	Acting	2.8 ± 5		3&1 → p<.0001 3&2 → p<.0001 3&4 → p<.0001
	At risk	3.1 ± 5		4&1 → p=.012 4&2 → p=.371 4&3 → p<.0001

Conclusions

Using "Stages of Readiness to Change" as the theoretical framework for this study emphasized the distinction between Medicaid non-participating dentists who are considering change and those who are not considering change. It also demonstrated the differences between Medicaid participating dentists who are satisfied and those who are thinking of quitting the program. There were no demographic differences by stage. However, dentists' attitudes towards Medicaid patients and program administration varied significantly by Stage of Readiness to Change.

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References

- Grol RP, Bosch MC, Hulscher ME, Eccles MP, Wensing M., Planning and studying improvement in patient care: the use of theoretical perspectives, Milbank Q. 2007;85(1):93-138
- Slater, M. D. (1999). Integrating Application of Media Effects, Persuasion, and Behavior Change Theories to Communication Campaigns: A Stage-of-Change Framework. Health Communication, 11, 335-354.
- Weinstein ND, Lyon JE, Sandman PM, Cuite CL. Experimental evidence for stages of health behavior change: the precaution adoption process model applied to home radon testing Health Psychol. 1998 Sep;17(5):445-53.
- Auld GW, Nitzke SA, McNulty J, Bock MA, Bruhn CM, Gabel K, Lauritzen G, Lee YF, Medeiros D, Newman R, Ortoz M, Read M, Schurz H, Shwhan E: A stage of change classification system based on actions and beliefs regarding dietary fat and fiber. Am J Health Promot 12:192-201, 1998
- Cheryl L. Straub-Morarend, Teresa A. Marshall; David C. Holmes; Michael W. Finkelstein Informational Resources Utilized in Clinical Decision Making: Common Practices in Dentistry, American Dental Education Association A J Dent Educ. 75(4): 441-452 2011
- Susan C. McKernan; Julie C. Reynolds; Elizabeth T. Momany; Raymond A. Kuthy; Elham T. Kateeb; Nancy B. Adrianse; Peter C. Damiano. The relationship between altruistic attitudes and dentists' Medicaid. JADA 2015;146(1):34-41