EVALUATING A LIFE SKILLS AND EMPLOYMENT PREPARATION PROGRAM FOR SINGLE PARENT MOTHERS ON ASSISTANCE: THE C.O.P.E PROGRAM

Вy

Arlene C. Young

A Thesis
presented to the University of Manitoba
in partial fulfilment of the
requirements for the degree of
Master of Arts
in
Sociology

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EVALUATING A LIFE SKILLS AND EMPLOYMENT PREPARATION

PROGRAM FOR SINGLE PARENT MOTHERS ON ASSISTANCE:

THE C.O.P.E. PROGRAM

BY

ARLENE C. YOUNG

A Thesis submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements of the degree of

MASTER OF ARTS

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The saying that "no person is an island onto themselves", acquired new meaning and depth while I endeavoured to complete this work.

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ABSTRACT

The purpose of this research was to evaluate whether or not a life skills and employment preparation program for single parent mothers on provincial assistance (called C.O.P.E) was effective in enabling them to make "informed rational decisions about their future participation in the labour force" (C.O.P.E manual:1992); where informed was operationally defined as "a comprehensive awareness of alternatives" and decision was defined as "the ability to act" (Baureiss; 1987: 27) on whatever decision was made.

The evaluation of this program was done by distributing a questionnaire that reflected core concepts taught in the program to experimental and control groups at three consecutive monthly intervals from September through November, 1993. (See Appendix F for greater details).

Eighteen women in the experimental group and twenty three women in the control group completed the questionnaire at three points in time for an overall response rate of fifty eight and eighty eight percent respectively.

The experimental group demonstrated significant gains in all areas taught in the program (with the exception of relationships).

However, due to the small sample size and lack of longitudinal analysis on these women's progress, caution must be exercised when interpreting these data.

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Chapter 1

1.1 <u>LITERATURE REVIEW/PROBLEM IDENTIFICATION</u>

The 1950's and 1960's witnessed a tremendous growth in research conducted on adult survivors of child abuse, with a specific focus on their socioeconomic status in adult life.

In the early 1970's, the focus of attention began to shift from this general group to single parent mothers on assistance; in part as the result of an alarming increase in the number of young mothers dependent on provincial assistance. For example, Barbara Whittington (1985) found that "83% of all single parent households are headed by women, and 58% of all those depend on welfare payments at some point." (P1-2)

The change in focus was also the result of findings that showed a positive correlation between women's personal histories and their eventual reliance on government support. For example, numerous studies (Emmel; 1988, Gross; 1984, Pool; 1986, Oates; 1986, McBroom; 1985 and the National Council of Welfare Canada; 1990) undertaken to assess the etiology of single parent mothers on assistance found that many had: histories of physical, sexual, emotional and/or psychological abuse; parents who tended to have drug problems; parents and relatives who had low levels of education; unstable living arrangements and few social/community supports. In addition, these children's parents tended to be extremely authoritative or unpredictable with respect to disciplining their children.

These factors were believed to have deleterious effects on

development. For example, it was found that children coming from such backgrounds tended to have a myriad of psychological problems related to low self worth and confidence. They also "exhibited ineffective control over emotions and experienced chronic emotional discomforts such as anxiety, shyness, loneliness, frustration and depression." (Thoits; 1988: 233) Communication skills were also usually poor, which made these difficulties worse.

Since stresses such as those described were often long lasting, unpredictable and uncontrollable, it was not surprising to find that many showed classical symptoms of learned helplessness and that "42% saw a professional for emotional health problems at some point in their lives." (Oates; 1986: 133)

Further, Women and Poverty Revisited, (1990) found that women coming from abusive backgrounds were "more likely to leave school early, enter their first union while quite young and bear children shortly thereafter." (National Council of Welfare Canada; 1990: 62)

As so eloquently summed up by psychologists and sociologists such as Cooley, Piaget, Erikson, Rogers (Monte; 1977) and Oates et al (1986), "Initial negative self appraisals derived from interactions with significant others have pervasive long lasting deleterious effects on intellectual, cognitive and emotional development." (Oates; 1986: 133)

Thus, as the result of an intellectually, emotionally and physically impoverished environment these women were considered to be at a disadvantage with respect to acquiring meaningful careers.

The corresponding lack of: finances, education, work history, effective social supports, and self confidence resulted in these women bearing children at an early age, which, in turn, further reduced the probability of them being able to return to school or work.

As socioeconomic status in this society is related to multiple health issues, it was a telling comment when Statistics Canada, (1990), found that "59% of all families headed by women parenting alone were below low income cut offs and are, therefore, among the most economically disadvantaged of all groups." (1990: 9)

Unlike the traditional theorists, some theorists in psychology and sociology maintained that knowledge and experience accumulated over the life cycle. (Some of the theorists and theories in Psychology are: Laing, R.: Existential Phenomenology; Maslow, A.; Allport, G., and Rogers, C: Humanistic/Self Actualization; and Galbraith, M: Transactional Analysis Theory). Theorists and theories in Sociology are: Cooley and Meed: The Looking Glass Self; Symbolic Interactionism, and Lenski, G: Self Interest). These theorists believed that it was possible to revise, ameliorate or adapt negative self appraisals through some form of cognitive restructuring. Daloz (1980) for example, found that through interaction and experience, people could increase their level and depth of understanding, thereby enhancing objectivity and relativistic conceptions of the world and self. The resulting sense of pride, accomplishment, and inner growth was further hypothesized to increase the individuals sense of self worth. In

addition, positive social supports were found to be significant in buffering the effects of stress, anxiety, and the tendency toward self imposed social isolation so that researchers recommended effective support systems be established for these individuals.

1.2 HISTORY OF THE C.O.P.E PROGRAM

As the result of this research, discussions occurred between the government and Red River Community College in the mid 1970's regarding the development and implementation of a life skills and employment preparation program for this client group. The program that was developed as a result of these discussions was called C.O.W.M.A (Career Opportunities for Women on Mothers Allowance). Funding for the project was obtained from Winnipeg Employment Services and Work Activity Project funds. In addition, Income Security (a government department) provided funds for transportation, child care and necessary clothing.

In 1982/1983 the Winnipeg Human Resources Opportunity Centre became involved with program planning and began to run its own life skills and employment preparation program, utilizing the model developed by Red River Community College. Human Resources called their program C.O.P.E (Career Opportunities in Preparation for Employment). In 1986, Human Resources Opportunity Centre began to run two C.O.P.E programs simultaneously three times a year. It was quickly expanded from six to eight programs per year and continues to operate this number of programs. The program run by Red River Community College was cancelled in 1992 as it was considered

redundant.

1.3 PROGRAM STRUCTURE

C.O.P.E was an eleven week life skills and employment preparation program that ran from 9:30 a.m.-3:00 p.m. Monday through Friday. It commenced in September, January and April every fiscal year. Forty eight women entered in September and April while only thirty two were enrolled in the January session. The women were divided into three groups of sixteen in the fall and winter, and two groups of sixteen in the January session.

C.O.P.E encompassed four life skills areas which were: Self, Family/Relationships, Leisure/Community, and Jobs/Education. The program was taught in three main sections. These were: Setting personal goals, personal/family management, and preparing for employment. (See Figure 1 and 2)

Unit 1, "Setting Personal Goals", (See Figure 1) spanned approximately three weeks and covered concepts found to be effective in increasing individual self esteem/confidence by teaching skills that led to enhanced personal and familial relationships. The topics considered most relevant were related to interpersonal skills such as: self esteem, communication and listening skills, assertiveness, anger/stress management, problem solving and personal goal setting. It was assumed that self concept increased as ability to resolve conflicts was enhanced.

Unit II, "Personal and Family Management", spanned approximately four weeks, and continued to focus on increasing

FIGURE 1/: C.O.P.E. PROCESS

MODULE	Topic A	Topic B	Topic C	Topic D	Topic E
UNIT I: SETTING P	ERSONAL GOALS				
Self Esteem / Anger / Stres	s / Communication / Solvin	g Problems			
1. Giving & Recieving	Communicating	Listening For	Gathering	Learning Skills	Working as a
Information	Verbally &	Understanding	Information		Team
	non-verbally.				
2. Communicating	(Rights &	(Understanding	Assertive	Dealing with	Special
Assertively	Responsibilities	Assertion	Expression	Anger	Application
*					Arcas
3. Exploring Personal	Examining	Analysing	Developing a	Creating a	Planning for
Roles	Women's	Roles	Personal	Healthy	Change
Roles	Scif-concept		Profile	Lifestyle	

Carry out the plan. Evaluate the results.

UNIT II: PERSONAL AND FAMILY MANAGEMENT

Family Relationships / Leisure / Accessing Community Supports

4. Relating to Others	Defining Roles and Responsibilities	Understanding Parenting	Recognizing Barriers in Relationships	Confronting Issues	Resolving Grief and Loss
5. Living in the Community	Responding to Community Problems	Using Resources for a Purpose	Contributing to the Community		
6. Planning and Organization	Determining Values	Making Decisions	Identifying Appropriate Resources	Solving Problems with a System	Accepting Success

Objectives: Write a personal action plan describing the steps to be taken to accomplish an identified group goal. Carry out the plan. Evaluate the results.

UNIT III: PREPARING FOR EMPLOYMENT

		1 - 1	1 -	Blending Worl	
Peers	with Authority	Rules and	work	and Lifestyle	
	()	Procedures	Performance	[
Assessing	Choosing an	Exploring Job	Overcoming	Career	
Qualifications	Occupation	Expectations	Barriers to	Planning	
	· ()		Employment		
Organizing for	Finding Job	Applying For	Interviewing	Evaluating	
Action	Opportunities	Jobs	For a Job	Results	
	Assessing Qualifications Organizing for	Assessing Qualifications Choosing an Occupation Organizing for Finding Job	Assessing Qualifications Choosing an Occupation Exploring Job Expectations Organizing for Finding Job Applying For	Assessing Qualifications Choosing an Occupation Choosing an Occupation Exploring Job Expectations Organizing for Finding Job Applying For Interviewing	

Objectives: Write an action plan describing the steps to be taken to accomplish a series of career goals. Given criteria, evaluate the results.

FIGURE 25: SAMPLE SCHEDULE

				UKE	2a: SAMPLE SC	REDU				 }
	MONDAY	10000000	TUESDAY	\$0000 A	WEDNESDAY	120000	THURSDAY	2230	FRIDAY	
1		S-18		S-10		S-30	•	S-21	,	S-22
	Communicating verbally	ŀ	latening for	C	Subcring information	1	s.m Analysing roles	ľ	Voriting se a toum	-
	and non-verbally	.	Understanding	- 1			p.m Learning skills			İ
										.
		100000	Staff roles	1 1 2		17.7593		× ****		.000000
2	Communicating	S-25	Health & Life Style	S-26	Assertion	S-27				5-29
	Assertively		.m Nutrition		Putting it all together		a.mHealth & Development		ı.m., «Birth control options	
	-Theory -Confidence		(Shirley McGuineau)		-special applications		(Diane Rayner)			
	-Rights & Responsibilities		p.mNon-verbal assertions		-special needs		p.m., -Tour: Contennial Library		p.mIntroduction to Exercise	1
	-Verbal Assertion		Thinking Assertively			· ·		20002		
3	-Examining Woman's	0-2		03		04	. •	0.5		0-8
	Self Concept		CONSULTATIONS		CONSULTATIONS		CONSULTATIONS	ŀ	Setting Personal Goals	- 1
	-Developing a Personal Profile		AND		AND		AND		•	
	-Planning for change		RESEARCH		RESEARCH		RESEARCH	-	p.mExercise	
4		0.9		0-10		0-11		0-12	-Recognizing Berriers in	0-13
1			a.mLevel Placement Test	**********	Defining Roles and		Child Development		Relationships	
	Thanksgiving Hollday		p.mManagement Skills		Responsibilities		(Loretta Scoop)		-Confronting Issues	
	timing ting inches		Budgetting		Understanding Parenting				-Resolving Grief & Loss	
1			(Shirley McGuinesu)				1		p.mExercise	
5		0-16	(Gutz) Intoduzin	0-17		0-18		O-19		0-20
"		0-10	Health and Life Style	tana.	a.mCoveribusing to the	1	a.mUsing Resources for	1	-Determining Values	14.44444
1	a.mResponding to				Community		s brithose		-Making Decisions	
	Community problems		Drugs & Workers' families		p.mVoluntocrism		p.m Economic Security		p.mExercise	
	p.mS.T.D.s		(June Campbell)		(Patricia Gove)		(Gary Corbett)			,
-	(Marrul Etchca)	No see		10.04	(Fither owe)	0-25	(Out) Concour	O-26		0-27
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	Identifying Appropriate		a.mTourt R.R.C.C		s.mAssessing Qualifications	•	Review		Ì	
1	Resources		Pre-technology				erin a stanta		1822 Portage Ave.	
1	Solving Problems with a		(Win Torchia)		p.mTour: R.R.C.C. Library	y	Skill Application			
	System	1 5.67	p.mSetting Group goals	\$2525	:	KIN:	<u> </u>	N-2		ка
7		0.30	•••	0-31		N-1	÷	i	Ramanta annua	1110000
	-Accepting Success		(Oneloc Neglot/						-Research reports	
	Exploring Job Expectations		Lorraine Jones)		Consultations & Employment		Consultations & Employment		-Choosing an occupation	
1	(Sharon Gould)		Overcoming Barriers to		Rescarch		Research		p.mExercise	
	Suonita Maharaj)		Employment	2.00.00		10		-		. 88270_1
8		N-6		N-7		N-8	<u></u>	N-9		N-10
	-Caroor Planning		a.mWpg. Adult Educ. Co.	urc	s.mWriting a Resour		a.mAdult Basic Ed.			
	-Scitting Curoor Goals		p.mSudent Social						Rememberance Day	
	-Organizing Information		Allowances		p.mTour: Job Sile		p.mSouth Wpg. Tech. Cents	c	Holiday	
			(Carla Bruckner)		<u> </u>		(Jane Stuebing)			
9		N-13		N-14	<u> </u>	N-15		N-16		N-17
	-Finding Job Opportunities		Tour: Job Site		a.mAssault Investigations		a.mPersonal Safety		a.mWorking in the Legal	
1					(Const. Dan Honder	non)			System	
1	-Applying for Jobs		Co-operating with Authority	,	p.mHarassment		p.mEmployment Standards		(Barb Murphy)	
	199				•		(Grece Sciby)		p.mExercise	
10	0	N-21	o	N-2	rél	N-2	2 .	N-23		N-24
''	-Employee Expectations	1	Employee Expectations	1		1		*******	-Blending Work and Lifestyle	c
	-Working with Poors		(Gordon Hutchison	ı	CONSULTATIONS &	ı	CONSULTATIONS &			
4		luma	Measuring Work Performa		ASSIGNMENTS		ASSIGNMENTS		p.mExercise	
	-Following Rules & Process	reres	Meraman More Letious		,					
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esteem and confidence by teaching skills that led to enhanced personal/familial and community relationships. The topics covered were: parenting techniques, time, money and anger management, and intimate relationships. It was assumed that by teaching women more effective ways of dealing with daily stressors their sense of control increased. It was presumed that this would, in turn, provide them with the basic stability needed to establish goals that related to careers.

However, in addition to expanding their awareness of family management principles, C.O.P.E immersed these women in a supportive network of fifteen other women who were in the same financial and This came about as the result of studies marital position. (Curtis; 1989, Whittington; 1986, and The National Council of Welfare; 1990 and 1988) that found that having cooperative supportive social networks alleviated anxiety and insecurity. As this occurred, "individuals began to engage in self-enhancing behaviours." (Curtis; 1989: 351) In addition to acting as buffers against the negative effects of stress, effective support systems became cohesive. High cohesion was found to facilitate cognitive and behavioral changes that were conducive to furthering career aspirations. Further, as most information was verbally relayed, the practical application of interpersonal skills was incorporated into all discussions.

Since "one of the most effective methods of reducing stress (defined as threats to self esteem) was to have the stressor

redefined through conversations with significant others who could be empathetic to the individual in question," (Thoit; 1986: 143)

C.O.P.E was a valuable addition to the more individualistic approach of the cognitive counsellor.

Employment" Unit III, "Preparing For also spanned approximately four weeks, and enhanced individual awareness of strengths/limits by: doing some basic subjective testing of academic and physical strengths/limits; having them write a basic math test; and where requested, a referral to agencies to do I.Q. testing. In conjunction with some rudimentary aptitude testing, the last three weeks explored the range of career/educational opportunities that existed for each individual, given the results These possibilities were evaluated in terms of: of tests done. aptitudes/limits; length/time frames of course of studies or work exposure; resources: finances, childcare, and supports; and future The other topics under consideration were: job prospects. employer expectations and employee rights, resume writing, writing cover letters, interview skills and establishing realistic career qoals.

Methods for teaching concepts included: role plays, role reversals, written exercises such as counterattitudinal essay writing, lectures, formal presentations, films, and a series of experiential exercises.

In summary, C.O.P.E operated on the premise that in order to be able to engage in a rational systematic process of decision making with respect to careers, women needed confidence in themselves and the belief that they could make decisions that would have a positive impact on their lives. Second, they needed to be embedded in a social network that was both supportive and challenging. The last premise was that women needed an awareness of aptitudes, resources and limits prior to making decisions about career directions.

1.4 CLIENT INTAKE PROCESS

Initially, an individual's income security counsellor filled out one part of an application form, had the client fill out another part, and forwarded it to winnipeg human resources opportunity program where it was assigned to a vocational counsellor. The counsellor did an in depth intake assessment to assess suitability for a wide range of services and made a decision as to which, if any, program met the client's needs.

If deemed appropriate for C.O.P.E, the individual was asked to attend an orientation session run by the C.O.P.E counsellors to give further information on the program. If the individual was still interested in the program after having attended this information session, the C.O.P.E counsellor had their file transferred to them from the original counsellor and arranged a time to visit the person at their home. If the counsellor determined that the individual was appropriate for C.O.P.E, she was assigned to one of three facilitators. The facilitator then conducted a home visit as a final suitability check and as a way to begin establishing a rapport with the individual in question.

1.5 CRITERIA FOR ACCEPTING CLIENTS

Over the years, the following criteria for accepting clients into the C.O.P.E program were established:

- 1. Single parent mothers.
- 2. On or eligible to receive provincial assistance.
- 3. Voluntarily opt to come into the program.
- 4. Willing, ready and able to make any changes deemed necessary to pursue vocational goals.
- 5. Able and willing to participate in group discussions.
- Sobriety period of three months prior to entering
 C.O.P.E if addiction problem evident.

All of these criteria were met prior to entering the program. In addition, though criteria seven through ten were also carefully considered before accepting an applicant into the program, they were not prerequisites.

- 7. Able to establish child care and back up care.
- 8. Managing basic home life adequately.
- 9. Unaware of employment/educational opportunities.
- 10. Unsure of vocational goals.

For example, if an individual was interested in attending the program but did not yet have childcare established, the C.O.P.E counsellor would attempt to help them do so. If unsuccessful, the individual would continue to try to establish care and would wait for the next session. In the event that an individual consistently failed to remove all barriers blocking entry into the program, she was referred to another agency and/or her file closed. Once the

impediments were dealt with, she would be considered once again.

1.6 FINANCIAL REMUNERATION

Once women commenced the program they received the following funds:

- Start up funds in the amount of \$69.00. \$44.00 is for their first months bus pass and \$25.00 is loosely called "coffee money."
- 2. \$9.00 per day or \$45.00 per week based on perfect attendance. This money is considered a voluntary incentive allowance, and, as a result, is not deducted from their social allowance payments.
- 3. Child care related costs as required.
- 4. Money for necessary clothing.

Summary

The C.O.P.E program operated on the premise that the women it served were: conditioned to respond to their environment in counterproductive ways; isolated from constructive supports; financially stressed, and lacking in the knowledge and skills needed to explore career paths.

Therefore, the program sought to alleviate these barriers by: teaching skills believed to enhance daily functioning, connecting these individuals to peer/community supports, providing some financial remuneration and by engaging in a series of career exploration exercises.

Chapter 2

THEORETICAL FRAMEWORK OF PROGRAM

The theories of reasoned action, learned helplessness and cognition reflected the theoretical framework and intent of the C.O.P.E program. Therefore, this research utilized these three models to determine the variables to be considered in assessing whether women who suffered the effects of dysfunctional backgrounds were able to alter their lives in a manner conducive to furthering their career aspirations.

2.1 THEORY OF REASONED ACTION

Ajzen and Fishbein's theory of reasoned action was used to delineate the thought processes that preceded decision making as "research has shown this model to have considerable success in predicting behaviour" (Aubry; 1971: 70) However, it was expanded to include a variable termed perceived behavioral control; developed by Ajzen and Madden in 1985 (See Figure 3).

Though fraught with problems, the basic premise in the theory of reasoned action was that individuals engaged in a systematic process of reasoning prior to choosing a certain course of action. This was particularly relevant to the C.O.P.E program, as it attempted to teach women to engage in a rational, systematic process of reasoning prior to choosing a career field.

Ajzen and Fishbein included the external variables: age, sex, occupation, socioeconomic status, education and personality traits in their research. As C.O.P.E served single parent mothers on provincial assistance, sex and socioeconomic status were known

FIGURE 3: THEORY OF REASONED ACTION MADDENS VARIABLE PERCEIVED BEHAVIORAL CONTROL ADDED

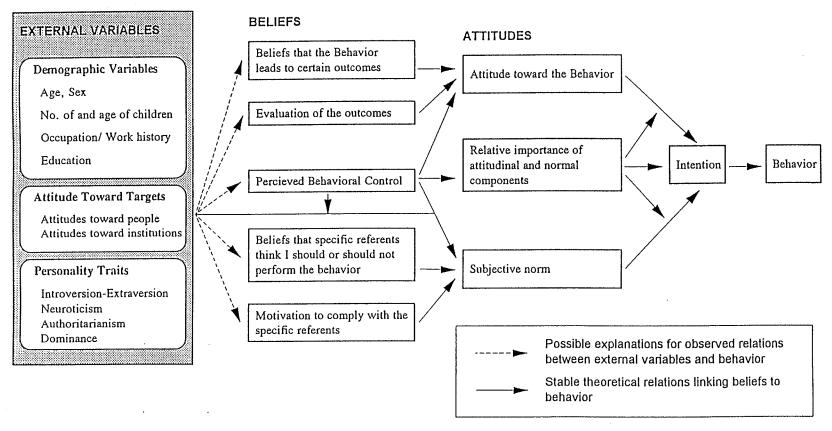


Figure 1 Theory of Reasoned Action

Note: From Understanding Attitudes and Predicting Social Behavior (p84) by Ajzen and M. Fishbein, 1980, Englewood Cliffs
NJ Prentice Hall Copyright 1980 by Prentice Hall.

variables. Further, as personality traits were found by Ajzen and Fishbein to have a tenuous relationship to behaviour, these variables were not used in this thesis. The external variables that were considered in the model were: age, age and number of children, and education. These variables were included because previous research had shown that they had a significant effect on decisions regarding careers. (Bahr; 1976, Beck; 1976, Canadian Council on Social Development; 1971, National Council of Welfare; 1990 Oates; 1986, and Schamess; 1990)

The three other variables: beliefs, attitudes, and intentions, were found to have a stronger relationship to observed behaviour than external variables and are discussed below.

Belief referred to the way in which people viewed people, events or things around them. Beliefs were measured on a true/false continuum and reflected what an individual agreed with and believed to be true. Though it was impossible to observe a belief directly, a person's behaviour often (though not always) reflected his or her belief system. It should be noted nonetheless, that beliefs did not have to be, and were often not, logical or rational.

The specific belief referents used in the theory of reasoned action were: beliefs that a given behaviour would lead to a certain outcome as well as an evaluation of that outcome as positive, negative or neutral. This was assessed by the individual in conjunction with their belief regarding what they thought significant others thought or wanted them to do. Their willingness to comply with other's wishes was based on whether or not they

wanted approval from these individuals and how highly esteemed these people's points of view were to the individual in question. Ajzen and Maddens variable, "perceived behavioral control" was added to the original model as "it was found to increase the accuracy of behavioral predictions." (Madden:1986:453) This variable referred to a person's belief in their ability to positively influence outcomes, and was important not only in terms of what people thought, but because of the similarity it bore to the theory of learned helplessness.

Ajzen and Fishbein hypothesized that the remaining three variables: attitudes, intentions, and behaviour were influenced by beliefs. Thus, in this model, beliefs or thoughts played a pivotal role in determining behaviour.

Attitude referred to the way in which people were disposed to respond to people, events and things. Attitudes were defined as "a persistent predisposition to act in either a positive or negative fashion toward a person, group, object, or situation." (Aubry; 1991: 74) Everyone was found to possess attitudes toward such issues as politics, education and sex. People were either for or against something, although the degree of conviction varied depending on how much people knew, how strongly they held their views, and/or how important that belief was to the formation of their identity.

A person's attitudes, like beliefs, were sometime unrelated to each other and at other times, part of a unified system in which attitudes influenced or were influenced by each other. Thus, a person who was deeply religious was likely to have a set of related attitudes concerning love and marriage, family life, education of children, religious observance, drug use and behaviour.

The attitudes under consideration in the Ajzen and Fishbein model were: attitudes toward the behaviour in question; the importance of attitudinal and normal components; individual's subjective norm. The person's attitude toward the behaviour was defined as "their predisposition to act in a consistently favorable or unfavorable manner toward a given object, person or place." (Ajzen and Fishbein; 1980: 10) The relative importance of attitudinal and normal components referred to the degree of intensity to which a person believed in something, and their understanding of what significant others expected from them, as well as the degree of importance the individual placed on Subjective norm referred to "the influence environmental factors (peers, media, school, society at large) had in shaping the individual's view of what was important. (Aubry; 1991: 74)

After considering the variables discussed under beliefs and attitudes, a person intended to perform a certain behaviour. However, Ajzen and Fishbein stated that "the intention to perform the behaviour must be immediately followed by the behaviour itself" (Aubry; 1991: 73) in order to be able to accurately predict behaviour.

Behaviour was defined as "the tendency to respond or behave in a characteristic manner". (Aubry; 1991: 75) For example, people

who held strong beliefs in a supernatural entity were also likely to worship in some manner. Once again though, behaviour within the context of the Ajzen and Fishbein model was viewed as the result of beliefs, attitudes and intentions.

These variables were relevant to the C.O.P.E program, as a great deal of time and effort was devoted to revising or ameliorating destructive belief patterns so that individuals began to realize that they were capable of positively influencing outcomes in their lives.

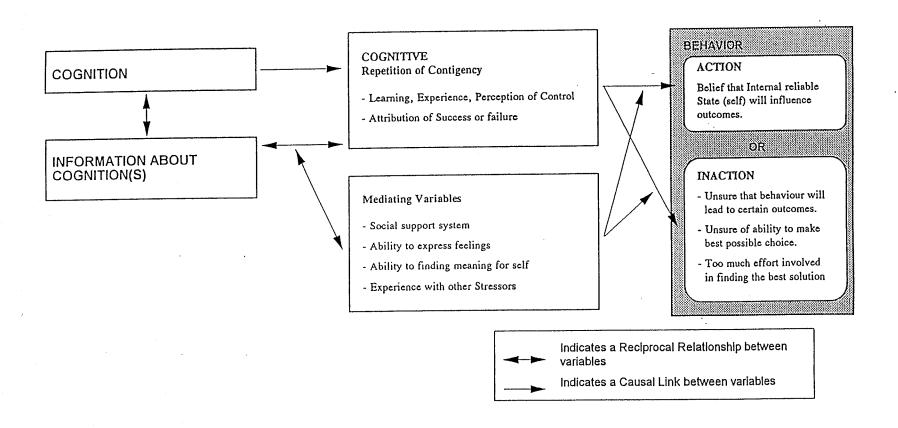
Further, it was predicted that once an individual perceived she could cope effectively with daily stressors, she would hold more favorable attitudes toward pursuing educational or career goals.

2.2 LEARNED HELPLESSNESS

Learned helplessness held the same basic premise as theory of reasoned action; that behaviour was influenced by a set of thoughts regarding a given action. (See Figure 4) In addition, it also explained why some people, particularly females, did not pursue challenging tasks. Initially, the theory stated that "exposure to prolonged, continually recurring, uncontrollable events will result in subsequent emotional and cognitive deficits", (Seligman; 1975: 280) including a distorted or decreased perception of ability to favorably influence outcomes. Thus, in achievement situations, helplessness was characterized by cognitions that implied inevitability or insurmountability. Statistically, since 95% of C.O.P.E participants had problematic histories, this understanding offered valuable insights into most participants state of mind at the time of entering the program.

In a study conducted on school age children to test the validity of this hypothesis, it was found that "while mastery oriented children believed their mistakes were correctable and success replicable, children who gave up believed that their mistakes were not correctible and that success was independent of their efforts." (Seligman; 1980: 198) These children were also found to "focus on the negative, and minimized the few successes they had, attributing these results to luck rather than effort." (Seligman; 1980: 198) In addition, there were marked differences in the sexes, with females being more likely than their male counterparts to condemn their abilities. show decreased

FIGURE 4: THEORETICAL FRAMEWORK OF LEARNED HELPLESSNESS



Note: From Helplessness: On Depression, Development and Death (p47) by Martin Seligman, 1975.

San Francisco, W.H. Freeman, New York.

performance, and have a lower expectation of success." (Seligman; 1980: 198) This had particular significance in terms of the C.O.P.E program as women were the participants.

The specific conditions under which individuals were found to relinquish control were: if the individual was unsure of whether or not their response would lead to the desired outcome; if they questioned their ability to make an accurate response, or if they needed to put a lot of effort into finding the best response. Further, "if failure was attributed to internal factors (self) rather than external (effort), perceived ability to control outcomes was reduced further". (Curtis; 1989: 100)

As a corollary to this, the theory stated that people were most likely to try to control situations when they believed that their response provided the most stable guarantee of minimizing danger. In order for individuals to believe this, they had to believe that this control was brought by some internal reliable source, namely the self.

Thus, the model of learned helplessness stated that thoughts or cognitions (particularly those that were concerned with the self) whether mediated, exacerbated or alleviated by life experiences, largely determined the type of behaviour engaged in. This framework added credence to the C.O.P.E program which believed that by altering negative cycles of thinking through

some form of cognitive restructuring, self esteem would be enhanced. Consequently, it was presumed that individuals would be more inclined to pursue educational/career goals.

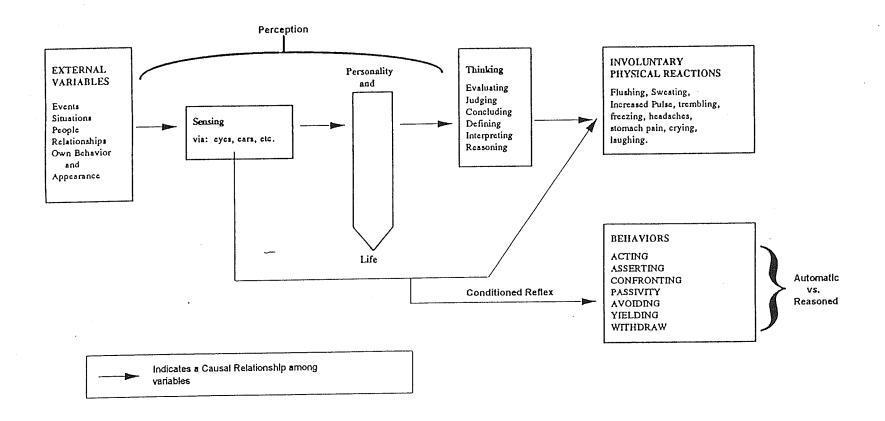
2.3 <u>COGNITION THEORY</u>

Cognition theory, like the theory of reasoned action and learned helplessness, assumed that "aspirations were the result of individual cognitions about their successes or failures." (Werner; 1982: 2)

For example, cognition theory (See Figure 5) stated that information was received by an individual via the senses. This information was processed, and a conclusion drawn based on the person's state of mind at that point in time, their personality and past life experiences. This resulted in an involuntary physical response such as sweating or blushing, followed by a conditioned/automatic or reasoned behaviour. (Werner:1982:9)

It was also believed that thoughts, and an interpretation of those thoughts, would determine the emotional response. Thus, in this model, emotions were regarded as a conscious process; the result of an individual's perceptions and evaluation of those perceptions. Therefore, emotions such as love, anger, hate, and fear were all termed psychosomatic; that is "the nature of the emotion was determined by both thinking and feeling elements of which it was comprised." (Werner; 1982: 6)

FIGURE 5: COGNITIVE THEORY MODEL



Note: From Werner (p9) Cognitive Therapy: E Humanistic Approach. (1982)

However, unlike the theory of reasoned action and learned helplessness, cognitive theorists believed their was a reciprocal rather than a linear relationship among beliefs, attitudes, intentions and behaviour. Therefore, it was believed that it was possible to alter beliefs and emotions by changing behaviour or by changing goals. Thus, educating clients as to the behaviours they needed to adopt to fulfil their needs could be successful in altering beliefs. For example, "successful assertion has been found to be effective in diminishing negative emotions." 1982: 8) In addition, cognition theory emphasized the human qualities in people by regarding them as having the ability to fashion their own lives by the force of their thinking, creativity, will, and behaviour. Nonetheless, cognition theorists maintained that the type of thinking people had with respect to themselves and their goals; based on an evaluation of numerous preceding events, were the primary determinants of behaviour. (Werner; 1982: 1)

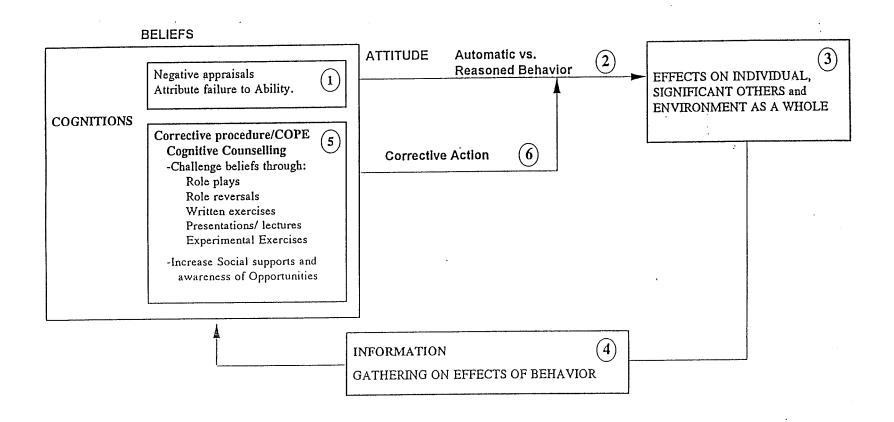
2.4 COGNITIVE THERAPY

Though all three theoretical frameworks discussed reflected the philosophy and framework of the C.O.P.E program, its practical application could be seen as a direct overlay of the cognitive counselling process. (See Figure 6)

The cognitive counselling model, like C.O.P.E, started with the premise that some individuals engaged in thinking processes expounded on in learned helplessness and cognition theory.

These thinking processes were believed to become conditioned, resulting in automatic involuntary physical and behavioral

FIGURE 6: COGNITIVE COUNSELLING MODEL



Note: Adapted from: Sociology and Modern Systems Theory (p173)

reactions that were counterproductive in achieving the individual's desired goals. These actions also had deleterious consequences in terms of sustaining relationships with significant others, which resulted in further social isolation and a reduced sense of self worth.

As a result, individuals were initially taught to modify negative or counterproductive thoughts/beliefs by becoming aware of the thought processes they engaged in prior to acting. They were then trained to: recognize and correct faulty perceptions and/or substitute accurate for inaccurate judgements and received feedback on their performance. (Beck; 1976: 217) The sheer weight of evidence contrary to negative appraisals was used to challenge currently held conceptions, but, as strongly held beliefs were extremely resistant to change, this method alone was viewed as unlikely to produce desired change. Providing alternative belief systems that accounted for many of the facts currently explained by existing belief systems was, therefore, another method commonly employed to alter beliefs. For example, someone who believed God created the world could also believe in evolutionism, even though the two beliefs appeared to be incompatible. "Counterattitudinal essay writing was a method where women wrote or presented arguments on a given issue that ran contrary to their own perceptions." (Alloy; 1988: 366)

In summary, individuals came to understand the nature of the belief, were taught methods of confronting and/or cognitively restructuring maladaptive beliefs and were provided with factual

evidence that challenged those beliefs whenever possible.

Cognitive therapy also assisted the person whose perceptions were accurate but whose reactions were counterproductive in achieving their desired end.

It was believed that in doing this work with an individual, behaviour would become more reasoned and rational. This in turn, was said to result in improved relationships with significant others. This initiated a positive cycle of thinking, thereby increasing individual perceptions of their ability to favorably influence outcomes.

Thus, cognitive therapy "evaluated clients in terms of limitations and distortions in consciousness and helped to bring those perceptions to a closer approximation of reality." (Werner; 1982: 1)

However, the focus of cognitive counselling was on the immediately observable level. That is, the focus was on how, rather than why, an individual misinterpreted or reacted to the environment in maladaptive ways. (Beck, Aaron; 1990: 310 - 325)

2.5 THEORETICAL FRAMEWORK OF PROGRAM

The C.O.P.E program (Figure 1) reflected all three theoretical frameworks in both its structure and format. C.O.P.E held that people's beliefs, specifically, beliefs they held with respect to themselves, were the primary determinants of behaviour; adaptive or counterproductive. Further, C.O.P.E believed that the women it served had been conditioned by their histories to lack confidence in their ability to positively influence outcomes in their lives and/or were uncertain of the range of options available to them, resulting in characteristic signs of learned helplessness. C.O.P.E also recognized that many behavioral reactions contained an emotional characteristic such as joy or anger. These behavioral responses became conditioned over time, setting off a perpetually dysfunctional cycle of conflicts with significant others, and, concomitantly, a decreased sense of worth. This understanding was reflected in cognition theory (Figure 5) and in the practical application of that theory, cognitive therapy. (Figure 6)

However, C.O.P.E went beyond these theoretical frameworks by: teaching concepts considered salient in developing an enhanced concept of the self, (See Figure 1, 3 and 4) embedding these women in a supportive milieu and by developing the skills and knowledge required for participants to make reasoned rational decisions regarding future career endeavours.

2.6 EVALUATION IDENTIFICATION

An interest in an evaluation of the program was stimulated through work as a facilitator with the program. A major question was whether or not an evaluation would be desired by the management and staff at that particular point in time.

To determine this, a discussion ensued with the centre manager, Gordon Hutchison, and the two C.O.P.E facilitators. An evaluation was welcomed by these people as a way to determine program effectiveness, as a forum for discussion and as a possible tool for determining areas where the program could be improved or expanded.

As part of the process in defining the evaluation, staff meetings were arranged where skill areas considered important in furthering career aspirations were defined. In addition to discussions with relevant staff, the questionnaire was developed by reviewing the program schedule. Once developed, it was pretested on staff and past C.O.P.E graduates who had varied levels of education and work history. The eight graduates who pretested the instrument were contacted by Otto Gebhardt (program manager) to see if these people would be willing to give feedback on Once agreed, I was given their names and phone instrument. numbers. They were then contacted and a time to visit them at their homes arranged.

Once there, they were given a cover letter to read (appendix A), and the questionnaire. They were all given the same set of verbal instructions which were to: read the cover letter, answer the questionnaire, and comment on issue's raised in the cover letter.

Chapter 3

RESEARCH DESIGN, SAMPLING PROCEDURE AND DATA COLLECTION

3.1 RESEARCH DESIGN AND INSTRUMENTATION

The study used a non-randomized experimental design. Members of both experimental and control groups were drawn from people who were eligible for the C.O.P.E program. This study was summative in nature. That is, it was intended to determine whether or not the program met its stated and implicit objectives. All measures were self reports based on individuals perceptions of how they felt about their life and career plans over the period of the study. Self-completed questionnaires were used.

As theories discussed reflected the overall intent of the C.O.P.E program, which was to enable women "to make informed rational decisions about their future participation in the labour force," they were incorporated into the structure and design of the program.

The theoretical assumptions considered to be of relevance in terms of the C.O.P.E program were:

- If individuals felt positive about themselves, they would be more inclined to logically and systematically engage in a process of reasoning prior to acting.
- 2. Beliefs included perceptions individuals had regarding their ability to positively influence outcomes in their lives.
- 3. Behaviours were often automatic, conditioned and contained an emotional element.
- 4. People required effective social and community supports to buffer the ill effects of stress.

- 1. If C.O.P.E was effective in enhancing individual self concept through awareness and behaviour modification, then the experimental group would have higher mean scores in the area's of self, and to a lesser degree, Family/Relationships. The increase in score would also reflect whether or not people began to act in more reasoned ways. The assumption here was that beliefs regarding self came primarily from the ability to deal with daily stressors effectively and from feedback that was received from significant others. (This reflected elements of both theory of
- 2. Further, as it was hypothesized by learned helplessness that people who experienced positive consequences as a result of using reasoned thought processes prior to acting would be more inclined to do so in the future, the C.O.P.E questionnaire included statements throughout that addressed thoughts and beliefs.

reasoned action and cognition).

Another belief, namely, perception of control, was measured by looking at answers to statements 6, 13, 18 and 21 under self, statements 1, 4, 6, and 11 under Family, the entire sections on Education/jobs and questions 6 and 9 under the open ended questions.

- 3. Emotional/automatic reactions were measured by looking at responses to statements under Self and Family. If individuals were able to begin to respond to others more cognitively and less emotionally, then there would be an increase in scores on the entire questionnaire by women in the C.O.P.E program.
- 4. Supports was addressed by looking at differences in mean

scores between the two groups on the section of the questionnaire that dealt with Community/Social Supports.

As the cognitive counselling model engaged in the same process as C.O.P.E did with respect to altering perceptions and beliefs, Figure VI was used as the theoretical blueprint for this evaluation.

According to this model, an individual started off with a negative perception of herself and her ability to respond to situations in constructive ways. This eventually gave rise to a set of highly emotionally charged, conditioned and automatic behaviours that were counterproductive in achieving desired goals. If these behaviours were socially unacceptable, the social milieu in which the individual operated would note the behaviours and take some form of action against the offender. This, in turn, set off a spiral of conflicts, which generally resulted in the individual furthering her own isolation.

Like cognitive counselling, C.O.P.E aimed to revise the way in which people thought and acted by challenging them through a variety of experiential exercises and lectures. However, unlike cognitive counselling, which focused on the individual, C.O.P.E focused on groups. Aside from the obvious economic advantages of running a group cognitive counselling program, interpersonal discussions that ensued between group members often served to reinforce and add a new dimension to skill acquisition. Further, as they became their own support network, they acted as buffers against the ill effects of stress and supported individuals who

were experiencing problems completing goals. As a result, the overall structure of the C.O.P.E program was a more sociological than psychological one.

QUESTIONNAIRE DESIGN

As the design and structure of C.O.P.E already incorporated the theoretical concepts discussed, (albeit indirectly) the questionnaire was developed by looking at figure 1 to determine which skill areas would be most valuable in enabling women to make informed rational decisions with respect to future participation in the labour force.

Further, an informal survey was conducted by Human Resource Opportunity Centre in late 1992 and early 1993 to determine whether or not past and present C.O.P.E participants found the program to be beneficial and in what ways. Feedback received from counsellors, facilitators, and clients regarding concepts that were considered most important in helping these women achieve their goals were almost identical. Therefore, this feedback was used when shaping the sections and statements that appear on the questionnaire.

In addition, statements were taken from the Barksdale Self Esteem Questionnaire, (1982) The Y.W.C.A volume five life skills manual, (1992) a C.O.P.E evaluation and survey forms, (1992) and Kuhn's Self Esteem questionnaire (1985). Statements were selected that addressed the information sought.

The questionnaire had six main sections, each of which reflected variables considered important for the later achievement

of These six goals. sections were: 1. 2. Family/Relationships, 3. Education/Jobs, 4. Community/Leisure, 5. Open ended questions, and 6. external variables. In addition, questions were ordered according to a set of guidelines used by Tim Aubry (1991). First, questions were ordered according to the area of importance to the clients. Thus, questions regarding self concept, family and job were given first, followed leisure/community. These four areas reflected life categories and the components of the C.O.P.E program.

The second guiding principle was to stagger questions of similar content to see if answers remained consistent. This was done by asking similar questions in different areas of the questionnaire and by asking open ended questions at the end. The third principle involved building a sense of continuity by ordering groups of questions of similar content. This was done by categorizing questions according to the four life skill areas. The final ordering principle involved placing more sensitive items after less sensitive items. (Aubry; 1991: 78)

3.2.1 VALIDITY

To ensure face validity, the questionnaire was pretested in August, 1993, on eight women who completed the C.O.P.E program that ran from April - June, 1993, for a total of eight women. These women were visited at their homes at a prearranged time, and were given a cover letter which contained guidelines for feedback (Appendix A), and the questionnaire. (Appendix F) Women were chosen

who had varied levels of education and literacy to ensure that the questionnaire was user friendly and easy to understand. In addition, Human Resource program and single parent job access program staff were also asked to pretest the questionnaire by evaluating how easy it was to understand, and whether or not enough statements were being given in each of the six sections.

Feedback received from past participants and staff were then recorded and analyzed. As a consequence, necessary modifications to statements and the format were made. For example, a rating scale was put on each page for convenience, a table for barriers was constructed on Page 7 of the questionnaire and some statements were reworded. In addition, four new statements were added that reflected skill areas taught. This, in conjunction with the informal survey that was done, was believed to give the questionnaire some face validity.

3.2.2 RELIABILITY

Reliability created some methodological difficulties as this particular questionnaire had never been used before. In an effort to address this concern, some of the statements were taken from other instruments that had been found to reliably measure certain beliefs. Further, as the instrument was pretested on staff and recent C.O.P.E graduates, it was believed that this instrument reliably measured whether or not C.O.P.E was effective in enhancing various skills.

3.3 QUESTIONNAIRE FORMAT

The questionnaire listed statements that reflected the program's ability to alter or revise maladaptive cognitive and behavioral responses to situations, objects or people. (See Figure 1 and 2)

Statements under self were assumed to reflect overall feelings of self esteem. The concepts focused on in this section were: self esteem (1, 8, 12, 16, 23), communication (2, 9, 25), anger (5, 17, 21) listening, (3, 10, 18, 20, 26), assertion, (4, 11, 13, 19, 27), problem solving, (6, 14) and personal goal setting. (7, 15, 22, 24) The statements in this section were staggered randomly. Though the ability to deal with stress effectively was one of the skills considered important, it was believed that responses to statements under Self and Family would reflect how well or poorly someone was coping.

Section II, Family/Relationships looked at: time management (1, 6, 11), relationships (2, 7, 12), parenting, (3, 8, 13) money management (4, 9, 14), and anger management (5, 10, 15)

Section III, Education/Jobs focused on: beliefs (1, 4, 7, 10), decision making/planning (2, 5, 8) and employment (3, 6, 9).

If plans were well thought out and supports in place, perceived ability to achieve plans should be higher for the experimental than control group.

Section IV, Community/Social Supports focused on how isolated or connected to family and community resources individuals felt.

Section V, Open ended questions, acted as a perception check

on feelings about Self, (statement 1) Decision Making (statements 4, 6) Future Plans (2, 3), and Barriers/Changes encountered (5). The last page looked at other external variables believed to impede these women's progress in their career choice. Specifically, these were age, age and number of children, and level of education.

3.4 <u>HYPOTHESIS</u>

The hypothesis of this evaluation was that single parent mothers on provincial assistance who entered and completed the C.O.P.E) program would be more likely than their equivalent counterparts to develop realistic career goals. Based on past research, C.O.P.E believed that women would only do this if they:

- 1. Believed in, and felt good about themselves. This
 was measured by looking at overall scores on
 the questionnaire throughout time, and by looking
 specifically at the score derived in the section on
 Self. In addition, perception of control was also
 assessed by looking at responses to specific statements
 throughout the questionnaire.
- Increased social/community networks. This was measured by looking at scores derived from the section on Family/Relationships, and Community/Social Supports.
- Developed realistic career plans. This was measured by looking at scores in the section of

Education/Jobs and at open ended questions 2, 3 and 6.

The skills deemed necessary in enabling someone to persevere in achieving realistic attainable goals are outlined in further detail under Questionnaire Design and appendix F.

3.5 SAMPLING PROCEDURE

The population for the study were individual referrals that were accepted into the September 13 - November 25, 1993 C.O.P.E As two groups, each comprised of sixteen women eighteen years or older were run simultaneously, there were thirty two women in the experimental group. Of these, thirty one agreed to participate in the study and signed a release of information to Though twenty four completed the program, only this effect. eighteen completed the questionnaire at three points in time, for an overall response rate of fifty eight percent. The control group was comprised of women who were accepted for the September, 1993 C.O.P.E program but who, for one reason or another, could not attend. Those who did not attend C.O.P.E because of mental health or drug abuse problems were deleted, leaving thirty four women. Of these, twenty six agreed to participate (releases of information were obtained) but only twenty three responded to the questionnaire at all three times, for a 88% response rate. These women were contacted by a letter (Appendix B) explaining the research and a release of information form was enclosed. (Appendix C). As this was unsuccessful in producing any responses, they were then contacted in person by the researcher and asked if they would be interested

in participating in the study. Those who agreed were left with a questionnaire and a prepaid self addressed envelope.

Though it can be argued that the control group was not equivalent to the experimental group because they did not attend the C.O.P.E program, I feel that barriers faced by these women were similar to those affecting people during their attendance in the program. Nonetheless, to ensure this was not a confounding factor in analysing the results, a question was included to determine barriers/obstacles faced by both groups. It was found that those in the control group were more likely than those in the experimental group to have moved, become pregnant, and end/start a relationship. However, people in the experimental group were more likely to have encountered difficulty with their children and significant others. (This may be one of the negative consequences of entering the program). Other than these factors, both groups reported an equal and similar number of obstacles in their lives.

3.6 <u>ADMINISTRATIVE PROBLEMS</u>

One of the most time consuming and frustrating problems was having the questionnaires distributed to the experimental group on the targeted dates at three consecutive monthly intervals. The second time the questionnaire was to be distributed it was delayed for unknown reasons. The last time the questionnaire was to be distributed (November 19, 1993) it was delayed for unknown reasons again and was not handed out until the day before graduation. As a result, six of the twenty four people in the experimental group

who were not there that day did not fill out the questionnaire at time three, making it very difficult to analyze the results.

To encourage a high response rate, the Criminology Research Centre paid each person \$10.00 for completing the questionnaires. However, as the funding was not yet approved at the time of implementation, people were told they would be paid when they filled out the second questionnaire. To further complicate matters, (as a result of a misunderstanding) people were told they would receive \$5.00 each time they filled out the questionnaire rather than \$10.00 altogether. This change may have been responsible for the low number of responses at time three (ten out of twenty three). After spending a fair amount of time tracking these individuals, I was able to get the twenty three questionnaires.

All women in the control group received a cover letter (See Appendix B) explaining the research, a release of information form (See Appendix C) and a questionnaire (Appendix F) which was delivered to them (with a self addressed, prepaid envelope) on Wednesday, September 15th, and then mailed to them along with \$10.00 Monday, October 15, and Friday, November 19, 1993. A post card reminder (See Appendix D) was sent to those who did not respond to the questionnaire two weeks after the initial mail out, and a second questionnaire (Appendix F) was sent to those who did not responded to the reminder three weeks after it was mailed along with another cover letter. (See Appendix E) As a last resort, those who did not respond to the reminders were visited at their

homes by myself at which time the questionnaires were collected.

Half of the control group required constant reminders and prompts to return their questionnaires. Even at time two, when they received \$10.00 with the instrument, nine people had to be visited at their homes before they sent the questionnaire back. Perhaps due to the lack of funding at time three, only ten out of twenty three people sent the final questionnaire back. Though two letters were sent out reminding the remainder of people, this only yielded two more responses. The last eleven people had to be visited at their homes and six required another questionnaire as they had misplaced theirs.

Further, although this evaluator had concerns regarding how open and honest people would be in responding to sensitive statements and in particular, the page on barriers, almost all participants filled out every section on the questionnaire, and, based on subsequent questionnaires filled out, appeared to be very honest in their responses. The qualitative data was also very helpful in checking overall perceptions and thought processes people engaged in when making plans but was extremely time consuming in analysing.

3.7 DATA COLLECTION PROCESS

Due to practical time and financial constraints, the most efficient method of collecting data was deemed to be a mail questionnaire for the control group. However, the instrument was given to those in the experimental group by Esther Penner, one of

the C.O.P.E counsellors.

The experimental group received the cover letter, release of information and questionnaire in their classrooms on Monday, September 13, 1993, the first day of the program, near the end of the day. They also received the questionnaire on Friday, October 26th, along with \$10.00 and Thursday, November 24th. Those missing were given the questionnaire on their return by their facilitators, (with the exception of the last time) who, in turn, gave them to Otto Gebhardt, the program manager. He, in turn, gave them to me.

CHAPTER IV THE IMPACT OF THE C.O.P.E PROGRAM

INTRODUCTION

According to the theories of reasoned action, learned helplessness, and cognition, individuals who believed they could positively influence outcomes in their lives and attributed that success to some internal reliable state, namely the self, would increase positive coping techniques. Given this to be the case, one could reasonably expect that as personal lives became more stable, individuals would be more inclined to pursue secondary or career related goals. Social psychological perceptions of self, therefore, influenced behavioral responses.

An attempt was made to evaluate these qualitative processes through a questionnaire that reflected core skill areas taught throughout the program.

The purpose of this evaluation was to determine whether or not the skills taught in the program enhanced individual functioning in day to day life and if this had any bearing on career plans. This chapter will present the results of the questionnaire, for both the control and experimental group. Specifically, I will outline each hypothesis that was generated and the findings with respect to each of them.

4.1 DATA ANALYSIS

Both qualitative and quantitative analysis were used. Scores on the quantitative measures were analyzed using the SAS computer program, computing means on the twenty variables studied, and significance tests. Open ended questions were analyzed using

qualitative methods.

4.2 EXTERNAL CHARACTERISTICS

The twenty three women in the control group and the eighteen women in the experimental group who responded to the questionnaire at three points in time were fairly representative of the C.O.P.E participants in general. All were single parent mothers on provincial assistance who lived within the boundaries of Winnipeg. There were fairly equal numbers of respondents in the north, south, east and west area of the city. This was important as it had been noted by human resource staff that people in the north end experienced more multiple stressors than their more suburban counterparts.

The experimental group ranged in age from twenty two to forty five with a mean age of twenty eight (Table 4.1). The average level of education was a grade eight, though one person had taken university courses. Everyone had a minimum of one child, and one person had seven, with the average number of children being 2.48. The age of children ranged from seven months to twenty one years of age, with a mean age of 8.9.

The control group ranged in age from nineteen to forty two with a mean age of twenty eight. The average level of education was grade nine with a few who had taken special training courses. The number of children ranged from one to three, with a mean of 1.61 children. The age of children ranged from one month to eighteen years of age with a mean age of 8.15.

TABLE 4.1
EXTERNAL VARIABLES

VARIABLE	N ·	EXPERIMENTAL GROUP						
		MEAN	STD DEV	MINIMUM	MAXIMUM			
AGE	32	28.28	5.38	22	45			
# KIDS	67	2.48	1.47	1	7			
MEAN AGE OF Kids		8.9		0.7	21			

LEVEL OF EDUCATION

GRADE 0-9 = 14University = 1 Grade 10-12 = 12 No Response = 5

CONTROL GROUP								
VARIABLE	N	MEAN	STD DEV	MINIMUM	MUMIXAM			
AGE	23	28.54	6.35	19	42			
#KIDS	36	1.61	.80	1	3			
MEAN AGE OF KIDS	• .	8.15		.01	.18			

LEVEL OF EDUCATION

GRADE 0-9 = -5 Special = 4

GRADE 10-12 = 13 No response = 1

Training

As stated earlier, twenty three people in the control group responded to the questionnaire at three points in time, for an 88% response rate. However, though twenty four people in the experimental group completed the program, only eighteen filled out the questionnaire at all three points in time, for a response rate of 58% Further, as seven did not complete the program, their responses were analyzed along with and separately from those who did complete the program to see if their responses were higher or lower than those who did complete. This analysis showed that the seven who did not complete the program had slightly higher scores on most variables under consideration at time one. As a consequence, their responses were deleted.

4.3 <u>SELF</u>

Section I, Self, was comprised of twenty seven statements that focused on skills believed to enhance self concept. As all statements were positive, an ideal score on each statement was four. Thus, a perfect score for this section was one hundred and eight. Scores from this section were added together for each person in the control and experimental group. Total scores for each group were tabulated, and a mean, or average, derived. Though the difference in scores between the two groups at time one were not significant, the control group means were slightly higher than the experimental groups. Differences noted at time two and three between the two groups were assumed to be as the result of the cognitive counselling intervention, C.O.P.E.

Hypothesis one stated that people who entered and completed

the C.O.P.E program would have a higher sense of self worth and an increased perception of their ability to positively influence outcomes in their lives.

Enhanced self-esteem was assessed by looking at overall scores on Section I, Self, (table 4.2.1) and question one under open ended questions. This section was broken down into the skill areas: self esteem, speaking skills, listening, assertion, problem solving, goal setting, anger management and perception of control (MEASCON). These statements were derived by looking at lesson plan objectives for each of these skill areas and then reflecting these objectives in the statements. Means for each of the two groups were compared on each of these variables with t-tests used to measure significance.

As can be seen on table 4.2.1, the control group had higher scores on self esteem, assertion, problem solving and anger management than the experimental group at time one. None of the differences were statistically significant at the .05 level. By contrast, the experimental group had a slightly higher score on speaking, listening and goal setting but, once again, did not approach statistical significance.

At time two, however, the experimental group had higher scores on all skill areas under consideration in section I. The most significant changes were scores on self esteem, speaking, assertion, problem solving, perception of control (MEASCON) and the overall mean on this section. Given that the control group had shown higher scores at time one on measures of self esteem,

TABLE 4.2.1

MEAN DIFFERENCES AND SIGNIFICANCE OF RESULTS BETWEEN TWO GROUPS AT THREE TIMES

	70.45	T =====	T	Т	SECTION I	SELF				
	TIME	ESTEEM	SPEAK	LISTEN	ASSERT	PROBLEM SOLVING	GOALS	ANGER MGMT	MEASCON	OVERALL MEAN
EXPERIMENTAL GROUP	1	2.43	3.02	3.13	2.74	2.47	2.54	2.40	2.69	2.69
CONTROL GROUP	1	2.57	3.01	3.04	2.94	2.58	2.46	2.39	2.69	2.75
DIFFERENCE IN SCORE		~14	~+.01	~+.11	~20	~11	~ + .11	~04	~.00	~06
EXPERIMENTAL GROUP	2	3.03	3.41	3.19	3.25	3.10	3.02	2.95	3.05	3.12
CONTROL GROUP	2	2.52	2.86	3.02	2.88	2.59	2.62	2.70	2.72	2.82
DIFFERENCE IN SCORE		**+.51	***.55	~+.17	* + .37	***+.51	*+.40	~+.25	*+.33	*+.30
EXPERIMENTAL GROUP	3	3.58	3.62	3.52	3.68	3.50	3.44	3.57	3.53	3.57
CONTROL GROUP	3	2.68	2.91	3.04	2.84	2.72	2.66	2.58	2.65	2.78
DIFFERENCE IN SCORE		***+.90	***+.71	*+48	***+.84	***+.48	*** + .78	***+.99	***+.88	***+.79

LEGEND

- A (-) "DIFFERENCE IN SCORE" INDICATES THAT THE CONTROL GROUP HAD A HIGHER SCORE THAN THE EXPERIMENTAL GROUP - A (+) "DIFFERENCE IN SCORE" INDICATES THAT THE EXPERIMENTAL GROUP HAD A HIGHER SCORE THAN THE CONTROL GROUP
- " = NON-SIGNIFICANT RESULT
 - = SIGNIFICANT AT THE .05 LEVEL
- ** = SIGNIFICANT AT THE .01 LEVEL
- *** = SIGNIFICANT BEYOND .01

assertion and problem solving, these changes were the most noteworthy. The areas that showed the least improvement at time two were listening and anger management.

At time three, all areas under consideration showed significant improvement, with all measures being statistically significant well beyond the standard criteria of .05 or .01. The variables where the most significant gains were made were self esteem, assertion, anger management, perception of control and the overall mean score on this section of the questionnaire. This is especially noteworthy as all of these areas were scored below the control group at time one.

Open ended question one, "Please state as many words as you can think of to describe yourself", showed a significant increase in the number and amount of positive words people in the experimental group used to describe themselves while those in the control group remained constant.

4.3.1 PERCEPTION OF CONTROL

Perception of control, (MEASCON Table 4.2.1) which was proven (Ajzen and Madden) to be related to behaviour was assessed by looking at responses to statements 6, 13, 18 and 21 under self and statements 1, 4, 6, and 11 under family. This variable was termed measure of control or MEASCON for short. Once again, those in the experimental group showed a significant increase in their perceptions regarding their ability to positively influence outcomes.

Further, open ended question four, "What steps do you take in solving problems", indicated that the experimental group began to engage in a systematic process of reasoning when dealing with problems encountered. For example, 15 out of 18 stated that they would: clearly identify the problem, define it, brainstorm solutions, opt for the solution that seemed most practical, implement it, monitor, evaluate and revise it as required. By comparison, the control group gave answers such as: ignore it, hope it will go away, and cry. Though these steps are not necessarily destructive, they are emotional rather than logical reactions.

However, as the answer most commonly given by the experimental group clearly reiterated the problem solving model taught in class, it was difficult to know whether or not they actually followed the stated steps.

4.4 FAMILY/RELATIONSHIPS

Section II, Family, was comprised of fifteen statements for a total possible score of sixty. As in the preceding section, total scores for this section were added together for each person. All individual scores for each of the two groups were then added together and a mean derived. Differences in the means between the two groups at time two and three not noted at time one were assumed to be as the result of the cognitive counselling intervention, C.O.P.E.

Means were derived for the section under family to assess whether or not individuals felt they could cope effectively with

daily problems encountered in the home. The specific skills that were considered were: their ability to deal with their significant other effectively (where they had one), their ability to deal with their children, and how well they felt they managed their money and time. (Table 4.2.2) Initially, the experimental group had an overall mean of 2.87 for family as compared to the control group, who had an overall mean of 2.80. Though the experimental group's overall mean was higher at time one, the difference in the scores between the two groups did not approach statistical significance. The control group had higher mean scores on relations (short for relationships) and parenting, while the experimental group had higher mean scores on the measures of time and money management. However, as in the preceding section, none of these differences approached statistical significance.

At time two, the experimental group had higher mean scores on all the variables under consideration. Statistically significant results were obtained on the variables parenting and money management. The mean score differences between the two groups on the variable parenting is especially noteworthy as the control group had higher mean score on this measure at time one.

At time three, the experimental group's scores were higher than the control group's and statistically significant on all the measures with the exception of relationships. The most notable increases were on the measures of time/money management and the overall mean score on this section.

TABLE 4.2.2

MEAN DIFFERENCES AND SIGNIFICANCE OF RESULTS BETWEEN TWO GROUPS AT THREE TIMES

SECTION 11 FAMILY

SECTION III EDUCATION / JOBS

	TIME	RELATION- SHIPS	PARENTING	TIME MGMT	MONEY MGMT	OVERALL MEAN	BELIEFS	DECISIONS	JOB PLANS	OVERALL MEAN
EXPERIMENTAL GROUP	1	3.02	3.31	2.79	2.59	2.87	2.76	2.27	2.10	2.41
CONTROL GROUP	1	3.24	3.45	2.92	2.18	2.80	2.76	2.85	2.72	2.77
DIFFERENCE IN SCORE		~22	~14	~ + .07	~42	~07	- +.00	~58	~62	~36
EXPERIMENTAL GROUP	2	3.48	3.69	3.19	2.88	3.25	3.32	3.25	2.76	3.13
CONTROL GROUP	2	3.31	3.26	2.93	2.18	2.82	2.70	2.76	2.59	2.68
DIFFERENCE IN SCORE		~+.17	**+.43	~ + .26	*** + .70	***+.43	***+.62	* + .49	*+.17	*+.45
EXPERIMENTAL GROUP	3	3.50	3.79	3.57	3.27	3.57	3.81	3.77	3.74	3.78
CONTROL GROUP	3	3.23	3.20	2.93	2.21	2.78	2.67	2.88	2.72	2.75
DIFFERENCE IN SCORE		~ + .27	***+.59	* + .64	*** + 1.06	***+.79	***+ 1.14	***+.89	***+1.02	***+1.03

LEGEND

- A (-) "DIFFERENCE IN SCORE" INDICATES THAT THE CONTROL GROUP HAD A HIGHER SCORE THAN THE EXPERIMENTAL GROUP - A (+) "DIFFERENCE IN SCORE" INDICATES THAT THE EXPERIMENTAL GROUP HAD A HIGHER SCORE THAN THE CONTROL GROUP
 - = NON-SIGNIFICANT RESULT
- * = SIGNIFICANT AT THE .05 LEVEL
- * = SIGNIFICANT AT THE .01 LEVEL
- *** = SIGNIFICANT BEYOND .01

4.5 EDUCATION/JOBS

Section III, Education/Jobs, had a total of ten statements believed to reflect the most relevant skills taught in the last section of the program. These statements also reflected whether or not individuals had career plans and, if so, if they saw them as achievable. (Madden: 1985)

Career plans were measured by deriving means for the two groups for the section Education/Jobs (Table 4.2.2) and by analysing open ended questions number 2, 3 and 6. The variables under this section were termed beliefs, decisions and job plans. At time one, the control group means for these variables were: 2.76, 2.85 and 2.72 respectively. The experimental group had means of: 2.76, 2.27 and 2.10 respectively. By the end of the program, the control group had means of 2.67, 2.88 and 2.72 (almost identical to time one means) while those in the experimental group had means of 3.81, 3.77 and 3.74. The change in beliefs from time one to time two were statistically significant as was the mean overall score on this section. While the experimental group showed significant improvement on the measure decisions, this result was not statistically significant.

At time three, results on the three variables were statistically significant, with the most notable improvements in beliefs and decision making with respect to their ability to develop career plans.

Open ended questions two, three and six demonstrated that, though the control group continued to reiterate the same plans, few

seemed to have any clear direction on how to pursue those plans and many had no idea when, if ever, it would occur. Factors that need to be considered such as finances, ability, length/time frame of the program, location, child care, and future employment prospects were only mentioned by three of the twenty three women in the control group who responded to the questionnaire at all three points in time.

By comparison, the experimental group altered stated career plans from the beginning to end of the program and became increasingly likely to look at the factors mentioned in the preceding paragraph prior to making final decisions regarding career plans. Indeed, by the end of the program, seventeen out of the eighteen who completed the questionnaire at all three points in time addressed all of the factors mentioned.

Nonetheless, both groups had some type of a career plan with one exception in the control group who stated that she just lived day to day.

Thus, though it can be concluded that the experimental group was much more likely to look at a range of factors prior to making decisions regarding career plans, it was impossible to determine whether or not they would actually follow through on these plans.

In summary, the hypothesis that people who entered and completed the program were more likely to develop realistic career goals was also supported by the results of this study.

4.6 COMMUNITY/SOCIAL SUPPORTS

Section IV, Community/Social Supports had a total of eleven statements for a total possible score of forty four. This section was included to assess how isolated or connected to community people felt. As in the three preceding sections, means for this section were derived for both groups at three points in time and compared. Differences at time two and three were believed to be as the result of the C.O.P.E program.

This section was designed to determine whether or not individuals felt they had, (or could access) constructive supports if and when required. (Table 4.2.3) Initially the experimental group had a mean score of 2.30 while the control group had a mean score of 2.47. At time two, the experimental group had a much higher mean score, and the differences were statistically significant. The differences between the two groups had increased even further at time three, indicating that the experimental group felt much more aware of and inclined to access supports as required. By comparison, the control group's mean score remained relatively stable throughout this period.

Therefore, the hypothesis that those in the experimental group would become more connected to community and family supports was supported by the results of this study.

4.7 OPEN ENDED QUESTIONS

Section V, Open ended questions, listed seven questions designed to act as perception checks on answers to statements in

TABLE 4.2.3
MEAN DIFFERENCES AND SIGNIFICANCE OF RESULTS BETWEEN TWO GROUPS

	TIME	SECTION IV COMMUNITY	OVERALL MEAN ON QUESTIONNAIRE
EXPERIMENTAL GROUP	1	2.30	2.62
CONTROL GROUP	1	2.47	2.68
DIFFERENCE IN SCORE		~17	~06
EXPERIMENTAL GROUP	2	3.01	3.12
CONTROL GROUP	2	2.37	2.74
DIFFERENCE IN SCORE		***+.64	**+.38
EXPERIMENTAL GROUP	3	3.34	3.60
CONTROL GROUP	3	2.47	2.64
DIFFERENCE IN SCORE		*** + .84	***+.96

LEGEND

- A (-) "DIFFERENCE IN SCORE" INDICATES THAT THE CONTROL GROUP HAD A HIGHER SCORE THAN THE EXPERIMENTAL GROUP - A (+) "DIFFERENCE IN SCORE" INDICATES THAT THE EXPERIMENTAL GROUP HAD A HIGHER SCORE THAN THE CONTROL GROUP

= NON-SIGNIFICANT RESULT

= SIGNIFICANT AT THE .05 LEVEL

* = SIGNIFICANT AT THE .01 LEVEL * = SIGNIFICANT BEYOND .01 the structured part of the questionnaire. Question one acted as a check on self concept, question two, three and six focused on decision making ability, future goals were looked at in question four, question five explored barriers people may have been encountering, and question seven was entirely open ended, asking them to add anything they felt or thought about the cope program. This was followed by external variables which were: age, age and number of children, and level of education.

4.8 EXPERIMENTAL GROUP DIFFERENCES OVER TIME

As can be seen from table 4.3, the experimental group's mean score continued to increase throughout the program on all sections of the questionnaire.

The most significant changes were with respect to the section on education. The three variables in this section; beliefs, decisions and job plans all improved by over one point from time one to time three, indicating that these people had made a great deal of progress in this area.

Two other sections of the questionnaire; self and family, were not as significant but this may be due to the fact that they scored fairly high in these sections at time one.

Under section I, self, the areas that showed significant improvement were self esteem, assertion, problem solving, goal setting, anger management and perception of control (MEASCON). However, though the ability to manage one's anger effectively and assert oneself were inextricably linked with the ability to communicate effectively, this variable showed the least

TABLE 4.3 EXPERIMENTAL GROUP MEAN SCORES AT THREE TIMES

, ————————————————————————————————————				
SECTION I SELF	TIME 1	TIME 2	TIME 3	Change in Score from time 1 to 3
Self Esteem	2.42	3.03	3.58	1.15
Listening	3.13	3.19	3.52	.39
Communication	3.02	3.41	3.62	.60
Assertion	2.74	3.25	3.68	.94
Problem Solving	2.47	3.10	3.50	1.03
Goal Setting	2.57	3.02	3.44	.87
Anger Management	2.40	2.95	3.57	1.17
Perception of Control	2.69	3.05	3.53	
Overall Mean	2.62	3.12	3.57	.84
SECTION II FAMILY			3.37	.95
Relationships	2 00			[
Time Management	3.02	3.48	3.50	.48
	2.94	3.19	3.57	.63
Money Management	2.59	2.88	3.27	.68
Parenting	3.31	3.69	3.79	.48
Overall Mean	2.87	3.25	3.57	.70
SECTION III EDUCATION				
<u>Beliefs</u>	2.76	3.32	3.81	1.05
Decisions	2.27	3.25	3.77	1.05 1.50
Job Plans	2.10	2.76	3.74	
Overall Mean	2.41	3.13	3.78	1.64 1.37
		<u></u>	3.70	1.37
SECTION IV		,		
COMMUNITY	2.30	3.01	3.34	1 14
	· · ·	3.01	3.34	1.14
OVERALL MEAN ON			1	
QUESTIONNAIRE	2.62	3.12	3.60	.98

improvement. One possible explanation was that, as they scored themselves fairly high on this measure at time one, less of an increase could be predicted. Another variable that did not show great improvement was the ability to listen, but, as they scored themselves fairly high on this measure to begin with, less of an improvement would be noted.

The skill areas looked at under family did not show large increases over time, but this was probably due to the high scores at time one. Nonetheless, mean scores in this section did increase over time, indicating that these skill areas were enhanced throughout the duration of the program. The two variables that showed the least improvement were relationships and parenting. The small improvement in relationship scores could be because fewer people in the experimental group were in relationships or simply because the mean score on this variable was fairly high to begin with. Parenting scores were also high at time one.

Section IV, Community, reflected the degree to which people felt connected to community resources. This area showed a tremendous improvement over time with the mean score going from 2.30 to 3.34 by the end of the program. This would indicate that, by the end of the program, people in the experimental group felt aware of and comfortable with approaching community agencies.

4.9 FACILITATOR RESPONSES

In order to check the perceptions of those who completed the program, facilitators were asked to fill out the same questionnaire on each individual who finished the program. (Table 4.4) Their responses were computed, means derived for each of the twenty variables, and compared to the responses of the experimental group The experimental group scored themselves higher at time three. than their facilitators did on all the variables. However, as the facilitators skill levels and knowledge base far exceeded those of the people they worked with, it was reasonable to expect that the facilitators would perceive peoples abilities to use these skills differently than those who were learning them for the first time. Further, as the facilitators did not do the questionnaires on the experimental group in the beginning, it is impossible to determine how much they felt the individuals had improved over time.

4.10 SUMMARY

Based on the means between the two groups and significance tests, it is readily apparent that the program does in fact, teach the skills mandated and that individuals in the program are able to assimilate and integrate skills taught. Further, career plans were altered and revised throughout the program, as people continued to look at an increasing range of variables prior to making decisions.

Though the control group also had established career plans that seemed to reflect their current academic background and interests, their personal lives were fairly problematic, leading one to the conclusion that the probability they will follow through

TABLE 4.4 FACILITATOR AND EXPERIMENTAL GROUPS MEAN SCORES AT TIME THREE

SECTION I SELF	EXPERIMENTAL GROUP	FACILITATOR SCORES	DIFF/SCORES
Sëlf Esteem	3.58	2.87	71
Listening	3.52	2.98	54
Communication	3.62	3.04	58
Assertion	3.68	3.07	61
Problem Solving	3.50	3.10	4.40
Goal Setting	3.44	3.01	43
Anger Management	3.57	2.97	60
Perception Control	3.53	3.01	52
Overall Mean	3.57	2.99	58
SECTION II FAMILY			
Relationships	3.50	2.80	<u>70</u>
Parenting	3.79	3.27	52
Time Management	3.57	3.09	48
Money Management	3.27	3.15	12
Overall Mean	3.57	3.06	51
SECTION III EDUCATION			
Beliefs	3.81	3.20	61
Decisions	3.77	3.26	51
Job Plans	3.74	3.12	62 58
Overall Mean	3.78	3.20	38
SECTION IV COMMUNITY	3.34	3.06	28
Overall Mean on Ouestionnaire	3.60	3.05	55

^{*}The negative score indicates that the facilitators mean score was lower than the experimental groups.

with stated plans is low. However, because the evaluation only covered the period of time the program was in session, it was impossible to determine whether or not participants pursued career plans. This indicated the need for a longitudinal analysis of both groups.

DISSEMINATION OF RESULTS

The information on the results and recommendations were distributed to Human Resources Opportunity management by providing both Denise Hanning and Otto Gebhardt with a copy of the thesis. They were asked to make their copy available to all interested parties and agreed to do so.

Though all participants were informed that they could receive a copy of the results by writing "copy of results" on any one of the return envelopes, no one did this. Though I concluded that they weren't interested in the results of the study, I gave everyone in the study my number so if they did decide they wanted the results, they could contact me and I would send a copy of the conclusions.

CHAPTER VI RECOMMENDATIONS AND CONCLUSIONS

This study was summative in nature and designed to determine the overall effectiveness of the C.O.P.E program at Human Resources Opportunity Centre. This section is based on the results of the questionnaire. The discussion will focus on the objectives specified for the evaluation.

SUMMARY OF THEORETICAL FRAMEWORK

As stated in the literature review, individuals experienced multiple prolonged uncontrollable stresses in their lives showed characteristic symptoms of learned helplessness, including a low sense of self worth. Many traditional theorists believed that the effects of an adverse upbringing had irrevocable repercussions on a persons emotional, intellectual and cognitive development. Other theorists disagreed, stating that learning occurred over the life cycle, rather than simply in the formative stages of development. Therefore, it was their opinion that it was possible to revise or alter peoples belief's and perceptions.

Three theoretical frameworks were reviewed in an effort to gain insight into how this could be accomplished.

The theory of reasoned action outlined a model that showed people engaging in a systematic process of reasoning prior to behaving in a certain way. In this theoretical framework, as in learned helplessness and cognition theory, beliefs/thoughts were viewed as playing a critical role in shaping subsequent behaviours. Specifically, the theory of reasoned action viewed the belief,

perceived behavioral control, as having a significant impact on behaviours. This term referred to the individuals belief regarding their ability to positively influence outcomes and was considered so important that the remaining two variables that were viewed as shaping behaviours, attitudes and intentions, were seen as being influenced by beliefs.

Learned helplessness theorists conducted studies that examined sex differences and the conditions under which people would choose to retain or relinquish control. These studies found that women were less inclined than their male counterparts to attribute success to internal states (self) which had a significant bearing on perception of control. Further, people were found to relinquish control if they were: unsure if their response would lead to the desired outcome, if they questioned their ability to make an accurate response, or if there was a lot of effort involved in finding the best response.

According to these two theories, the best way to revise, ameliorate or revise counterproductive behaviours was to work on altering beliefs, but neither specified how to do this.

By contrast, the cognition theorists did. They advocated cognitive restructuring and behavior modification.

Cognitive counselling, the practical application of cognition theory, attempted to address counterproductive cycles of thinking by engaging in various forms of cognitive restructuring and by having the person in question adopt a different set of behaviours. However, unlike the cognitive counselling model, which focused on

the individual, C.O.P.E used the group process to facilitate change. Aside from the economic benefits of working with groups, it also had the added benefit of providing people with a peer support group that could offer support, advise and feedback on their progress.

C.O.P.E attempted to enhance self esteem by increasing basic life skills through the employment of various forms of cognitive restructuring, and through guided behavioral change exercises.

During the course of the program, mean score results on the questionnaire showed statistically significant increases on all but one dimension (relationships) taught in the program.

Learned helplessness also said that people would relinquish control if, among other things, there was a lot of effort involved in finding the best response. C.O.P.E successfully addressed this issue by allowing women to look at a range of options open to them with respect to career choices. The results under the section of education/jobs corroborates this assertion.

Thus, it can be concluded that, though people may engage in conditioned counterproductive behaviours, it is possible to alter these through cognitive restructuring, putting constructive supports in place, altering behaviours, and giving them the information they require. Thus, the results of this study lend empirical support for the three theories employed in this study.

POLICY IMPLICATIONS

Based on the results of the study, C.O.P.E was able to, through a series of structured exercises, assist women in cognitively restructuring perceptions/beliefs. It also increased their connectedness to community/personal supports and led to the development of career related goals.

The benefits that will follow from such a program are many, ranging from enhanced self esteem to financial independence.

As women begin to reap the benefits of responding more positively to daily problems, their self concept and overall sense of well being will increase. It is logical to presume that this will set off a positive spiral of coping mechanisms which would further enhance a sense of personal autonomy,/control, mastery over their lives, and eventually lead to self actualization. Thus, even if the program were only successful in assisting an individual to acquire or regain a sense of dignity, this would be significant in and of itself.

As women began to enhance their relationships with their children during the program, they reported that incidents of violence and yelling decreased. This will have positive effects on children as it will allow them the opportunity to gain and maintain a sense of harmony and control over their own lives.

Children growing up in these families should also begin to witness more positive coping techniques and a favorable perception of education and work from their mothers. This role model facilitates the belief by these children that they can, to some

degree, control outcomes in their own lives. These beliefs will reduce the probability that these children will become dependent on government assistance, thereby breaking the cycle of welfare.

Further, as women pursue educational and/or career related pursuits, their reference group will change accordingly to include work peers, resulting in an increased connectedness to positive supports. As the children of these mothers will interact with the children from their peer group, it will expose them to a wider range of social and educational opportunities.

The effects that functioning families have on society as a whole are tremendous. As children become exposed to the positive role models of their mother and her new peer group they should become increasingly connected to a community that fosters reasoned problem solving and a working career.

If this indeed the case, there would be less of a need for intervention programs and workers in the lives of these women.

As women complete this program, they should be more employable. As they began to earn their own money, they would become less reliant on the government for support, and would eventually become self supporting. This would, once again, reduce the probability that their own children would need government assistance. The net result in savings to the government over the long run would be quite substantial.

Therefore, the nominal financial costs of the C.O.P.E program would be quickly recovered even if only some of the women were successful in entering and remaining in the field of work.

LIMITS OF STUDY

As the questionnaire was answered by forty one women at three points in time, the sample size was small. Therefore, any generalizations must be made with caution.

Second, as the instrument was never used before, it should be administered to another group to see if the results can be replicated.

Third, as responses were entirely attitudinal, it was impossible to know if individuals actually acted in accordance with their stated responses and plans.

SUGGESTIONS FOR FURTHER STUDY

Though this study found that C.O.P.E was effective in changing perceptions and behaviours, it did not determine if these changes persist and/or lead to changes in behavior over time. In fact, one researcher (Patterson; 1980: 88) noted that there was a return to baseline behavior one year after parents completed a parenting program. Given that a certain rate of decay can be expected, one avenue for further research would be to take half of the experimental group and give them a half day refresher course six months after program completion to see if this effects outcomes at one year. This would allow, to some degree, for an assessment of the relationship between attitudes and behaviors.

Second, a longitudinal analysis that examines these women's progress with respect to their self concept, problem solving techniques and connectedness to community/personal supports is clearly called for. Further, it would be valuable to find out how

many of these women find and maintain employment five years after completing the program.

Nonetheless, in spite of the limits of the study and need for further research, it is evident from the results that C.O.P.E met its explicitly stated objective which was "to enable women to make informed rational decisions with respect to their future participation in the labor force.

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APPENDICES

COVER LETTER FOR PRETEST

Hello. As many of you know, my name is Arlene Young. I am a graduate student in the Sociology department at the University of Manitoba and was formerly employed as a C.O.P.E facilitator with Human Resources Opportunity Centre. To complete the requirement for my Masters degree, I have chosen to evaluate the C.O.P.E program.

To do this, I have developed a questionnaire that will be distributed to the next C.O.P.E group. The questionnaire is split into four main sections, each of which reflect a life skill area.

Under section I, Self, the skills focused on are: self esteem (Statements 1, 8, 15, 22), communication (2, 5, 9, 16, 23) listening (33, 10, 17, 19, 24), assertion (4, 11, 18, 25), problem solving (6, 13, 20), and goal setting (2, 7, 14, 21).

Section II, Family/Relationships, focus on: time management (1, 6, 11), relationships (2, 7, 12), parenting (3, 8, 13) money management (4, 9, 14) and anger management (5, 10, 15).

Section III, Education/Jobs, focuses on: beliefs (1, 4, 7, 10), decision making/planning (2, 5, 8) and employment (3, 6, 9).

Section IV, Community/Social supports, looks at how connected people feel to social and community supports.

WHAT I would like you to do is look over the questionnaire and tell me if:

- I have focused on the most important skills taught.
 -If you feel I haven't, please write the skill
 area's you think should be covered on the back of
 the questionnaire or on a blank sheet of paper.
- There are enough statements for each skill area targeted.
 -If you feel other statements should be added, please write them in under the appropriate section.
- The questionnaire was easy to understand and fill out.
 If not, please write in the changes where you think they should be made.

If you have any other suggestions or comments, please write them in.

If you have any questions or concerns, please call Arlene at 284-2299.

THANK YOU for your cooperation and support. Sincerely,

Arlene Young

COVER LETTER

Hello. My name is Arlene Young. I am a graduate student in the Sociology department at the University of Manitoba. I was also formerly a C.O.P.E Facilitator with Winnipeg Human Resources Opportunity Centre and am interested in learning whether the C.O.P.E program is meeting its goal of assisting women like yourself enter the occupational workforce. Though I am aware that some of you have not yet taken this program, your thoughts and opinions are still very important to me. Indeed, this questionnaire has been constructed to allow you to provide me with information which will be used to evaluate and improve the C.O.P.E program. This research will also allow me to complete my Master of Arts thesis.

I would like you to help me in this research by taking a few minutes to complete this questionnaire. In the course of this study I will be distributing the same questionnaire (either by mail or your facilitator) during the week of October 18 - 22nd, and once again during the week of November 22nd - 26th to see if any of your thoughts, opinions, or circumstances have changed.

However, it is important that you know that your participation in this study is completely voluntary. Thus, not being interested in being a part of the study will in NO way affect your acceptance into or participation in any of Winnipeg Human Resources Opportunity Centre's programming.

Any information you do provide will be kept confidential. This will be done by having questionnaires sent to the University of Manitoba (Care of Rod Kueneman) along with the list of names. He will code the questionnaires by name so that we can determine Names will not be used in the final who has responded. results. Those attending the program will give the questionnaires to the facilitators who will put them in sealed envelopes which will then be sent directly to Rod Kueneman, at the University of Manitoba. In essence, this means that the researcher, Arlene Manitoba. Young, will only have access to addresses and information received from the questionnaires once completed. This has been done in an attempt to ensure that you feel comfortable in giving honest candid answers to the statements on the questionnaire. However, if there are any statements you do not wish to answer, leave them blank and go on to the next one.

Attached is a release of information form for this study. In order for us to distribute the questionnaire we need to have this form dated and signed. If you do not want to be part of the study please put a note on your door, window, or mail box saying "NOT INTERESTED" by September 15th as the researcher will be out to pick up all forms mailed out.

If you would like to partake in this study, please put your consent form on your door or mailbox by September 15th. A questionnaire will be left in its place along with a self addressed prepaid envelope. Please return this questionnaire as soon as you

can as you will be receiving another one shortly.

The results of the study will be made available to Human Resource staff and managers; University of Manitoba Personnel and all interested citizens. You can receive a summary of results by writing "copy of results" on the back of the return envelope with your name and address below it.

If you have any questions about the study, contact Arlene Young at 284-2299.

Your cooperation and support are greatly appreciated and instrumental in improving the quality of programming you receive.

Sincerely,

Arlene C. Young Researcher

RELEASE OF INFORMATION REQUEST

DATE	, 1993
I, authorize Human Resources Opportunity Prog address, and phone number to Arlene Young, the University of Manitoba, so that questionnaire relating to the C.O.P.E prog	Care of Rod Kueneman at
I understand I will be given this questionn September 13 - 17th, the week of October 18 Huring the week of November 22 - 26th.	aire during the week of - 22nd, and once again
consent to this study with the knowledg	e that the information
IGNED	

POST CARD REMINDER

Last week a questionnaire on the C.O.P.E program was sent out asking for your responses to a number of questions.

If you have already completed and returned it to us, please accept our sincere thanks. If not, please do so as quickly as possible. As only a small number of people have received this questionnaire, it is important that your answers be included in the results.

If you did not receive, or misplaced the questionnaire, please contact me at 284-2299 and I will send another one out to you immediately.

Once again, your cooperation and support are deeply appreciated.

Sincerely,

Arlene C. Young Researcher

COVER LETTER FOR THE SECOND MAILOUT

About three weeks ago, we wrote to you seeking your opinions about issues related to the cope program. As of today we have not received your completed questionnaire.

While we realize that this survey will take fifteen minutes of your time, we hope you will see it as a contribution to improving the quality of programming in the community. We have undertaken this study because we believe your opinions should be considered when looking at program changes. Second, as only a small number of people have been asked for their opinions, your responses are very important.

In the event that your questionnaire has been misplaced, a replacement along with a postage paid return envelope is enclosed. If you have any questions about the study please feel free to call me at 284-2299.

I look forward to hearing from you shortly.

Your continued support and cooperation in this research is greatly appreciated.

Sincerely,

Arlene C. Young Researcher

C.O.P.E QUESTIONNAIRE

	Please score the questions according to the guide below. (Try to respond in a way that reflects how you feel overall, rather than your views on any given day).
	0 - False 1 - Rarely True 2 - True about half of the time 3 - True 70% or more of the time 4 - True 90% or more of the time 5 - Not applicable
	SELF
1.	I feel reasonably happy, all things considered
2.	I can express my ideas clearly.
3.	I understand what others are saying.
4.	I speak up for my ideas, likes and dislikes.
5.	I say "I am angry/hurt" when hurt by something someone has done.
6.	I find solutions to problems.
7.	I develop hobbies for myself.
8.	I feel equal to others, regardless of their position in society.
9.	I am aware of my feelings.
10.	I can temporarily ignore my own opinions while listening to what someone else has to say.
11.	I keep a positive attitude.
12.	I admit my mistakes and defeats without feeling ashamed or "less than".
13.	I feel comfortable disagreeing with anyone's opinions.
14.	I am happy with the way I deal with problems.
15.	Every now and then, I do something special for myself.

0 - False

1 - Rarely true

2 - True about half of the time 3 - True 70% or more of the time

	4 - True 90% or more of the time 5 - Not Applicable
16.	I feel warm and friendly toward myself.
17.	I say "I" and not"you" when telling someone how I feel about something they have done. (I am versus you make me).
18.	I find it easy to pay attention to what others are saying.
19.	I make my own decisions.
20.	I listen to and consider what others say even when angry.
21.	I think before I react.
22.	I priorize what needs to be done most and then do it.
23.	I have a sense of direction in my life.
24.	I take care of basic health needs (Exercise, diet and sleep).
25.	I am honest when expressing my feelings.
26.	I understand what someone is feeling based on their behavior
27.	I am able to establish friendships based on honesty and trust.

- 0 False
- 1 Rarely true
- 2 True about half of the time
- 3 True 70% or more of the time
- 4 True 90% or more of the time
- 5 Not Applicable

FAMILY/RELATIONSHIPS

1. I find time to do the things most important to me.
2. Relationships I have with people are positive.
3. I stay focused on behavior when disciplining my child(ren)(s) misbehavior.
4. I have enough money to cover basic needs throughout the month.
5. I do not call people names when angered.
6. Things that are important in my life get done.
7. I understand and verbalize what I need from my (partner, boyfriend, common law) in order to make our relationship work.
8. I respect my childs right to be heard.
9. I handle debts responsibly.
10. When angered by those close to me (boyfriend, child, parents, etc) I tell them how I feel.
11. I am on time for appointments. (Doctor, Lawyer, etc.)
12. My partner/boyfriend/common law spouse resolve disagreements peacefully.
13. I understand the skills required to have a healthy relationship with my child(ren)
14. I am able to live within my budget.
15. I focus on people's behaviors when discussing problems I am having

- 0 False
- 1 Rarely true
- 2 True about half of the time
- 3 True 70% or more of the time
- 4 True 90% or more of the time

EDUCATION/JOBS

1.	I could return to school if so desired.
2.	I know which things to consider before choosing a career plan.
3.	I know how to write an up-to-date resume.
4.	I can acquire any skills necessary to achieve goals I set for myself.
5.	I know which arrangements I need to make in order to return to work or school.
6.	I am comfortable with the idea of being interviewed for a job.
7.	I develop achievable goals for myself.
8.	I have a back up plan in the event that my first plan doesn't work.
9.	I can answer difficult questions in an interview. (ie; Do you have a criminal record?)
10.	I achieve goals I set for myself.

- 0 False
- 1 Rarely true
- 2 True about half of the time
- 3 True 70% or more of the time
- 4 True 90% or more of the time

COMMUNITY/SOCIAL SUPPORTS

1.	If I needed advice about something, I could go to someone in my neighborhood or class.
2.	I share problems I am experiencing with people I trust.
3.	I am aware of community resources in my neighbor-hood.
4.	I have reliable supportive people in my life.
5.	I go out for enjoyment once or twice a month.
6.	I would approach a professionals or social service agency if I needed help with something.
7.	I ask people I trust for their ideas and opinions regarding problems I experience
8.	I do not feel lonely.
9.	I know how to access community resources.
10.	. I work well in large groups of people. (15-20)
11.	I am able to decide which community resources I need to access by myself.

OPEN ENDED QUESTIONS

	e as many words as you can t		
.		o = 9	
At preseni	Upgrading - grade 9	University	
	Grade 10 -12	Job Search	_
	Skills Training (Please Specify)	Work Experience Other (Please State)	
What are	your plans for your future.	••	
Six m	onths to one year from now?		
Two t	o five years from now?		
Five t	o ten years from now?		
Ten t	o twenty five years from now	?	
What ste	ps do you take in solving pro	olems?	
	What are Six m Two t Five t Ten to	At present time, what is your career planting - grade 9 Grade 10 -12 Skills Training (Please Specify) What are your plans for your future. Six months to one year from now? Two to five years from now? Five to ten years from now? Ten to twenty five years from now?	At present time, what is your career plan? Upgrading - grade 9 University Grade 10 -12 Job Search Skills Training Work Experience (Please Specify) Other (Please State) What are your plans for your future Six months to one year from now? Two to five years from now?

5. Please underline any factors that have prevented you from achieving goals over the last month.

PERSONAL / FAMILY FACTORS

Personal injury/illness/handicap
Trouble with former Spouse/partner
Pregnancy/Miscarriage/Abortion
Increase/Decrease in number of Household
Change in religious beliefs
Increase / Decrease in financial status
Assault (sexual/physical/verbal)
Crime against family member/self
Increase/decrease in self concept
Ended/started a relationship
Seperation/Divorce
Habits I - Increase S - Same D-Decrease
AlcoholExercise DrugsTobacco NutritionOther
Death of a close friend or family member
Illness/Healing of a family member
Parent/Child tensions
Change in recreation patterns

Change in cooperation / understanding from friends and family				
Other				
EDUCATION / TRAINING / EMPLOYMENT				
Increase in workload				
Increase/decrease in recreational activites				
Moving to a new place				
Increase / decrease in number of friends				
Started education / training				
Change in childcare arrangements				
Lacked education / training				
Quit a job or program				
Change in relationships at work				
Involvement with community agency				
Change in financial status				
Started a new job				
Harassment				

Other

•		
	EXTERNAL VARIAI	BLES
Your Age		
ast Grade Completed		
Age and number of childre	n	
	en	
List any special courses tak	en	
List any special courses tak	en	
List any special courses tak	nistory by:	
List any special courses tak	nistory by:	
List any special courses tak	nistory by:	

THANK YOU FOR YOUR COOPERATION AND SUPPORT

The SAS System ---- COMP=1 GROUP=1 TIME=1 -----

			•		
Yari ab le	N	Мезп	Std Dev	Minimum	Maximum
ST T T T T T T T T T T T T T T T T T T		2.6983914265 8019389104265839104265839104265 84185573900426583658265 22.4305562265 22.430556826701 22.44762677125 22.44762677125 22.44762677125 22.49428842677122 23.3194686723 24.47657514	0.5845030 0.5754661 0.575450045 0.668507461 0.668507461 0.6616440 0.5447558 0.74616442 0.55447558 0.77409211 0.650358544 0.73616657 0.650366560 0.82047668 0.82047668	1.3333333 1.7407407 1.4000000 0.6000000 0.6000000 1.5000000 1.5000000 0.3333333 2.0000000 1.5000000 0.5000000 1.53333333 0.0000000 1.33333333 0.0000000 0.33333333	3-7778 3-813437 77778 3-1437090009 3-14370900000000000000000000000000000000000

----- COMP=1 GROUP=1 TIME=2 -----

Variable	N	Мезп	SEd Dev	Minimum	mumixsK
T Y FOOM N THE STREET HE S	777 74 74 74 44 44 44 44 44 44 44 44 44	3.1249137 3.1239936 3.258333 3.0197826 3.0197826 3.0197826 3.0197826 3.0197826 3.0197826 3.1941667 3.1941667 3.1941647 3.4861111 3.4861111 3.486888888 3.3229167 3.2500000 2.7638889	0.3331376 0.4147800 0.497489 0.4904893 0.5158276 0.4912148 0.5394576 0.4739596 0.4409834 0.5985338 0.6322247 0.5985338 0.6322247 0.5376336 0.8204315 0.3666886 0.82043185 0.3934185 0.6389151	2.2063492 2.0740741 2.2666667 2.8989890 1.80000000 1.80000000 2.3333333 2.4000000 2.2000000 1.75000000 1.6666667 2.0000000 2.3333333 3.00000000 1.3333333 2.50000000 1.33333333	3.6031746 3.7777778 4.133333 3.920202 3.7500000 3.80000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.00000000

The SAS System

COMP=1	GROUP=1	TIME = 3

Variable N Mean Std Dev	Minimum Maximum
SELF, 16 3-5740741 0-2287118 3-6441LY 16 3-5750000 0-42571352 3-750000 0-42571352 3-750000 0-42571352 3-750000 0-42571352 3-750000 0-42571352 3-750000 0-42571352 3-750000 0-42571352 3-7500000 0-24571352 3-7500000 0-24571352 3-7500000 0-24571352 3-7500000 0-24571354 3-7500000 0-44571354 3-7500000 0-44571354 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-42867465 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286746 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-75000000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-4286774 3-7500000 0-428674 3-7500000 0-428674 3-7500000 0-4286774 3-7500000 0-42867	.2539483

The SAS System

COMPEI	GR GUP = 2	TIME=1

Variable	N	Mean	Std Dev	Kinisua	Maximum
T LAUCHXER ET FE ELFICHESPESELES ET FE T LAUCHXER ER ET FE ELFICHESPESELES ET FE T LAUCHXER ER ET FE ELFICHESPESELES ET FE	NANANANANANANANANANANANANANANANANANANA	2.648073 2.675680097 2.875080097 2.877003213153 2.877003213153 2.877003213153 2.877003213153 2.877003213153 2.877003213153 2.877003 2.877003 2.877003 2.877003 2.877003 2.877	0.554925 0.49425 0.49425 0.49425 0.49425 0.49430 0.89124 0.89124 0.89124 0.891380 0.991380 0.99	1.457556 1.955556 1.95333330000 0.3636364 1.92036364 1.8636667 1.60000000 1.60000000 1.60000000 1.60000000 1.60000000 1.60666667 1.600000000 1.6066667 1.333333 0.533000000000000000000000000000	3.6984127 3.7777778 3.733333 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000

----- COMP=1 GROUP=2 TIME=2 -----

Variable	N	Mean	Std Dev	Minimum	Maximum
T YTHOR AT HE SELICATION AT HE SELICATION AT HE SEATER LISE WENTY HE SEATER LISE WENTY HE SEATER LISE WHITE A SEATER LISE WENTY HE WENTY HE SEATER LISE WENTY HE W	111222222222222222222222222222222222222	2.84 2.82 2.82 2.82 2.82 2.37 2.37 2.37 2.37 2.36 2.37 2.36 2.37 2.36 3.37 3.30 2.70 3.30 2.70 3.30 2.70 3.30 2.70 3.30 3.00	0.4804909 0.4941114 0.57769797 0.4766707 0.47660331 0.77598131 0.457500804 0.6710333 0.75701804 0.67103334 0.6795296 1.0156306 0.6795296 1.0156306 0.6795296 1.0156306 0.6795296 1.0156306	1.4285714 1.77778 1.666667 0.6000000 0.9090909 1.8750000 1.0000000 1.8000000 1.5000000 1.5000000 1.16666667 1.3333333 0.6666667 7.0000000 0.33333333 1.500000	3.3968254 3.46666667 3.46666660 3.46000000 4.00000000 3.80000000 3.8000000 3.8000000 3.8000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000

The SAS System

- COMP=1 GROUP=2 TIME=3 -----

Variable	N	Mean	Std Dev	Minimum	Maximum
OUELMIN NT M SPANNIN M M M M M M M M M M M M M M M M M M	7293213333222222222222222222222222222222	2.6479925 2.7894788 2.7894737 2.7552066 2.6547619 2.6547619 2.6647565 2.9130435 3.0434783 2.7272727 2.6630435 2.7272727 2.6630435 2.5873016 2.93939393 3.22800000 2.2171212 2.6739130 2.88405807 2.87246377	0-7059084 0-6762183 0-6762183 0-62433535 0-9142416 0-7012964 0-77148363 0-7554806 0-704737 0-7757061 0-7741619 0-7741619 0-7042633 0-97578489 0-97578489 1-233587	1.2698413 1.4074074 1.533333 0.4000000 0.8181818 1.0000000 1.2000000 1.5000000 1.5000000 1.5000000 1.5000000 1.6666667 1.0000000 1.6666667 0.75000000 0.3333333	3.6349206 3.9629630 4.0000000 4.00000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.0000000 4.00000000

ble:		Xean	Std Dev	Std Error	Miniaum	Maximum '	Yarlances	• т	OF .	Prob>1T1
	23 ×	2.42801932	0.58450303	0.12187731	1.33333333		Unequal Equal	-0.3308 -0.3300	41.9	0.7425
	21	2.58480726	0.55406343	0.12090655 (22,20) Pr	96>F' = 0.8145	3207012012	-,			
		are equal, F'			*****	~~~~~	.020000000	****	*******	
			*****	****	*****	••••	•			
016:	SELF .	Mean	- Std Dev	Std Error	Kinimum	Maxinus	Yariances	T	DF.	Prob>:T:
	23	2.59887279	0-57521927	0.11994151	1.74074074	3.81481481	Unequal Equal	-0.3130 -0.3137	42.0	0.7559
		2.75589226 are equal, F'	0.64329593 = 1.25 · OF =	_	ab>F1 = 0.6060			٠.		
				~~~~	*****	******	*****	***	*****	******
	FAMILY	3C 55 5 6 6 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7	<del>++++++++</del>							:
,,,,,,	. N	Nean	Std Dev	Std Error	Minimum	Maximum	Yariances	<u> </u>		Prob>:T1
1		2.57536232 2.80909091	0.63446608	0.13229532	1.40000000 1.93333333	1.1333333333333333333333333333333333333	Unequal Equal	0.3923	41.3	0-6968
		are equal, F'			rob)F' = 0.2510	•				•
				<del></del>		****	*****	*****	*****	****
	E DU CATE			•						
 P	N	Mean	Std Dev	Std Error	Minimum	mun i xxX	Yariances	T	0F	Prob>ITI
l Ž	23	2-41739130	0.76850041	0.16024341 0.18702545	0.4000000	3.80000000	Unequal Equal	-1.465Z -1.465Z	43.0	0.1501
_		2.77826087 are equal. F'			rab>f" = 0-4744					: :
			•							•
					TTEST PROCEOURE			*****	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	******
88556			******	e= 00 C= 0C 33 C = 0:	cocc LIME=F cocco					
•	יי כמאאטא		Std Dev	Std Error	mumini K	mumizeK	Variances	T	0F	`Prob>:T:
UP	<u> н</u>	2.30830040	0.74550450	0.15544843	0.90909091	3.90909091	Unequal Equal	-0-6595	42.3	0.5131
ž	23 23	2 - + 70 35 57 3	0-91265918	0.19030260	0.36363636 Prop>F' = 0.3498	4.0000000				·
HO:	Yarlanc	es are equal , !								
***	****	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	****	******		22264535775545	385555555			
rizbl	e: "NEASC!	CN		Sta Error	. Xiniaus	Maximum	Yariance:	; T	0.5	·Prob>:T:
OUP	N	Nean	0.56017612	0.1376562	1.5000000	3.87500000	Unequal Equal	0.0305	42.5	0.9758
2	23 23	2.69565217 2.69021739	0-54469232	0.11357620	) [.37500000 Prop>6' = 0.3740	3.75000000	Equa.	010147		: .
r H0:	Yarianc	es are equal.		- (22,22)						
* ***			*****				2202200000			
rizoi	le: ESTEE			Sta Erro	r Ainiaus	Maximum	Variance	s î	OF	·Prab>:T
GUP	H	Z.43478261	Std Dev 0.82164397	0.1713245	1 1,0000000	4.00000000	Unequal Equal	-0.5499 -0.5499	43.7	0.585
Ž	23	2.57391304	0.89301196	0.1862058	7 0.80000000 Prob>F' = 0.6995	4.00000000	2402.	****		
or HO:	: Yariand	es are equal +		= (22,22)						,
	***			:= == == == == == ==						
ar ia o	ie: SPEAR	•			e dinisus	Maximum	Yariance	s T	05	Prob>!T
2002	н	Mean		0.1046000		5.00000000	Unequal	0.0679	34.5	0.946
Ž	23 22	3-02898551 3-01515152	0.81958354	0.1747358	1.6666667	4.00000000	Ednai	0.0000		•
or H0	: Yarian	ces are equal,	F* = 2.67 08	= (21,22)	Prob>F' = 0.0265	,				•
					TTEST PROCEDURE					*****
20020		c =c =c=c=c=c=			secces LIME-F cook					•
	ie: LIST					ña x i mum	Yarianc		06	`Prob>!T
ROUP	N N	near		0.113589	4.4 2.00000000	4,0000000	Unequal	0.5234	43-5	0.603
1 2	23 23	3.13043478 3.04347826	0.29134901	0.121229	85 1.50000000	4.0000000	Equal	0.3434	77.4	
or H	o: Yarian	ices are equal-	, F* = 1.14 O	F = (22.22)	Prob)f' = 0.762					
		:: :: :: :: :: :: :: :: :: :: :: :: ::	*****	<b>edsscesssss</b>		*********	*****		*****	
)0CCC:										
	ole: ASSE	ER T				·	. v:	T	DF	'Prob>:
	Die: ASSE N	R T nea	n Std Oev			72ximum			43.9	0.35

TTEST PROCEDURE

					TIME=L *******	****	****	****		
٠.	٠,		*****	***						
		3 CC	• • • • • • • • • • • • • • • • • • • •					т	OF .	Prab>iT:
able: 4		· Mean	Std Dev	Std Error	Minimus		Variances Unequal	0-0278	43.4	0.9780 0.9780
P 	- <del></del>	2.40579710	0.93585440	0.19513913	0.16666667	3.56666667	Equal	0-0278 0-0278	44.0	0.9780
2	23	2.398550/2	0.83142073		-Set = 0.5836					:
HO: Yar	i anc es	are equal, F'	= 1.27 OF =	(22,22) Pro				****	****	*
			***	***	*****	***				
							Variances	τ	DF	Prob>:T:
able:		Hean	Std Dev	Std Error	Ainimum	Maximum 000000000	Unequal	0.0661	44.0	0.9476
<u> </u>	_ <del>_N</del>	2.94202599	0.73616652	0.15350133	1.33333333	4.00000000	Equal	0.0661	44.0	427414
2	23 23	2.92753623	0.75180941	_	op>F' = 0.9223					•
но: Уа	er ianc es	are equal, F	= 1.04	(22124.	****		****	***	:++++++	****
	:: #c## <b></b>	****	****	***	****					
	RELATE					Haximum	Yariances	T	OF	
UP	N	Mean	Std Dev	Std Error	Ainimum	4.6666667	Unequal	-0.7751 -0.7751	43.2	0.4425
		3.02898551	1.01460568	0.21155991 0.18415183	0.00000E+00 1.33333E+00	4.6666667	Equal	-0.11.52		
ž	53	3.24637681			0057 = 0.5Z06					
. HO: A	ar lances	are equal, F	1.32			****	****		*****	****
=======	*****	2	****	***	*****					
	PARENT				Minimum	Maximum	Yariances	T		
		Леал	Std Dev	Std Error	1.00000000	4.00000000	Unequal Equal	-0.7865 -0.7790	37.6 43.0	0.4365
nue	N	n can								
		3-31884058	0-69251599	0.14439957	2.6666667	4.00000000	equa.			
OUP 1 2	23 22	3-31884058	0.44299909	0.09444772 - 122.211 P	2.6565666/ rap>f' = 0.0450					:
1 2	23 22	3-31884058	0.44299909	0.09444772 - 122.211 P	2.6565666/ rap>f' = 0.0450				*****	
1 2	23 22	3-31884058	0.44299909	0.09444772 - 122.211 P	2.6565666/ rap>f' = 0.0450				:00000000	*****
1 2 or HO: \	23 22 Var ianc =	3-31884058	0.44299909	0.09444772 - 122.211 P	2.6666666	*********	- -		:*************************************	**************************************
1 2 or HO: \ :::::::::::::::::::::::::::::::::::	23 22 22 and 12 nc =	3-31884058 3-4545455 s are equal, f	0.44294904	0.09444772 - 122.211 P	2.6666667 radof" = 0.0450 com TIME=1 account	овессараваоо Махіяця	yariances	T 4207	42.4	0.1627
1 2 r HQ: \	23 22 Variance variance nacces nacces nacces	3_11884058 3_45454545 s are equal, f	0.44 29 99 09 51	0.09444772 (22,21) P	2.6666667 raa>F' = 0.0450 cos T[ME=1 cossas:	*********	- -			0.1627
1 2 r HO: \ seemed riable: GUP	23 22 Var ianc e : nonex : nonex N	3.31884058 3.45454545 s are equal, 8 excesses consess Mean 2.59420290 2.18840580	0.44299909 :- 2.44 DF ::::::::::::::::::::::::::::::::::::	0.09444772 (22,21) P Std Errar 0.22074705 0.18127796	2.666666/ rad>f' = 0.0450  === T[ME=1 assass  Minimus  1.00000000  0.33333333	######################################	Variances Unequal	1 - 4207 1 - 4207	42.4 44.0	0.1627 0.1625
1 2 or HO: \ seemood riable: gup	23 22 Var ianc e : nonex : nonex N	3.31884058 3.45454545 s are equal, 8 excesses consess Mean 2.59420290 2.18840580	0.44299909 :- 2.44 DF ::::::::::::::::::::::::::::::::::::	0.09444772 (22,21) P Std Errar 0.22074705 0.18127796	2.666666/ rad>f' = 0.0450  === T[ME=1 assass  Minimus  1.00000000  0.33333333	######################################	Variances Unequal	1 - 4207 1 - 4207	42.4 44.0	0.1627 0.1625
1 2 r HO: \ seemed riable: GUP	23 22 Var ianc e : nonex : nonex N	3.31884058 3.45454545 s are equal, 8 excesses consess Mean 2.59420290 2.18840580	0.44299909 :- = 2.44 DF ::::::::::::::::::::::::::::::::::::	0.09444772 (22,21) P Std Errar 0.22074705 0.18127796	2.666666/ rad>f' = 0.0450  === T[ME=1 assass  Minimus  1.00000000  0.33333333	######################################	Variances Unequal	1 - 4207 1 - 4207	42.4 44.0	0.1627 0.1625
The Head of the He	23 22 Yar lance : MGNEY N 23 23 Yar lance	3.11884058 3.4545455 s are equal, f cocooccococcocc  Mean 2.59420290 2.18840580 cs are equal,	0.44299909 :- = 2.44 DF ::::::::::::::::::::::::::::::::::::	0.09444772 (22,21) P Std Errar 0.22074705 0.18127796	2.6666667  rad>f' = 0.0450  com T[ME=L acmack  Minimum  1.00000000  0.33333333  rad>f' = 0.3625	# 20000000	Yariances Unequal Equal	1 - 4207 1 - 4207	42.4 44.0	0.1627 0.1625
1 2 r HG: \\ 200000000000000000000000000000000000	23 22 Yar lance : MGNEY M 23 23 Yar lance	3-11884058 3-4545455 s are equal, f cocooccooccoocco Mean 2-59420290 2-18840580 cs are equal, f	0.44299909 :- = 2.44 DF ::::::::::::::::::::::::::::::::::::	0.09444772 (22,21) P Std Error 0.22074705 0.18127796 - (22,22) P	2.6666667 raa>F' = 0.0450  DESTRICT TIME=1 account  Ainimus  1.00000000 0.33333333  rao>F' = 0.3625	#axiaum  4.00000000  4.00000000	Yariances Unequal Equal  Yariances Unequal	T 1.4207	0F	0.1627 0.1625
1 2 r HO = 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23 22 Yar lance : MGNEY M 23 23 Yar lance	3-11884058 3-4545455 s are equal, f	0.44299999  5: = 2.44	0.09444772 = (22,21) P 	2.6666667  rad>f' = 0.0450  com T[ME=L acmack  Minimum  1.00000000  0.33333333  rad>f' = 0.3625	# 20000000	Yariances Unequal Equal	T 1.4207 1.4207	44.0 44.0 ecoccec	0.1627 0.1625
To Hot I	23 22 far lance see accord N 23 23 yar lance see ELIE N 23 23	3-11884058 3-4545455 s are equal, s dean 2-59420290 Z-18840580 es are equal, s es are equal, s Expenses are expenses	0.44299909  5' = 2.44	0.09444772  (22,21) P  (22,21) P  (22,27,705 (21,8127796 (22,22) P  (22,22) P	2.666666/ raa>F' = 0.0450  TIME=1 222222  Minimus  1.0000000  0.33333333  raa>F' = 0.3625	#axiaum 1.00000000  #axiaum 1.7500000000	Yariances Unequal Equal  Yariances Unequal Equal	T 1 - 4207 1 - 4207 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	42.4 44.0 0F 43.6 44.0	0.1627 0.1625
To the second of	23 22 far lance see accord N 23 23 yar lance see ELIE N 23 23	3-11884058 3-4545455 s are equal, s dean 2-59420290 Z-18840580 es are equal, s es are equal, s Expenses are expenses	0.44299909  5' = 2.44	0.09444772  (22,21) P  (22,21) P  (22,27,705 (21,8127796 (22,22) P  (22,22) P	2.666666/ raa>F' = 0.0450  TIME=1 222222  Minimus  1.0000000  0.33333333  raa>F' = 0.3625	#axiaum 1.00000000  #axiaum 1.7500000000	Yariances Unequal Equal  Yariances Unequal Equal	T 1 - 4207 1 - 4207 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	42.4 44.0 0F 43.6 44.0	0.1627 0.1625
To the second of	23 22 far lance see accord N 23 23 yar lance see ELIE N 23 23	3-11884058 3-4545455 s are equal, s dean 2-59420290 Z-18840580 es are equal, s es are equal, s Expenses are expenses	0.44299909  5' = 2.44	0.09444772  (22,21) P  (22,21) P  (22,27,705 (21,8127796 (22,22) P  (22,22) P	2.666666/ raa>F' = 0.0450  TIME=1 222222  Minimus  1.0000000  0.33333333  raa>F' = 0.3625	#axiaum 1.00000000  #axiaum 1.7500000000	Yariances Unequal Equal  Yariances Unequal Equal	T 1 - 4207 1 - 4207 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	42.4 44.0 0F 43.6 44.0	0.1627 0.1625
1 2	23 22 24 ar i and e 3 and accord 3 MONEY N 23 23 23 24 ar i and c 8 N 23 23 23 23 24 ar i and c	3.31884058 3.4545455 s are equal, f  2.59420290 2.18840580 s are equal, f  2.75085957 2.76085957 cs are equal.	0.44299909  5' = 2.44	0.09444772  (22,21) P  (22,21) P  (22,27,705 0.18127796 (22,22) P  (22,22) P	2.666666/ raa>F' = 0.0450  **********************************	#axiaum  1-00000000  1-00000000  1-00000000  1-00000000	Yariances Unequal Equal  Yariances Unequal Equal	T 1.4207	42.4 44.0 0F 43.6 44.0	0.1627 0.1625 -Prob>iT 1.000 1.000
The second of th	23 22 24 ar i anc e 300 accas c 31 accas c 32 accas c 3	3.31884058 3.4545455 s are equal, f  2.59420290 2.18840580 s are equal, f  2.75085957 2.76085957 cs are equal.	0.44299909  5' = 2.44	0.09444772  (22,21) P  (22,21) P  (22,27,705 0.18127796 (22,22) P  (22,22) P	2.666666/ raa>F' = 0.0450  **********************************	#axi sus  1.00000000  1.00000000  Maxi sus  1.7500000000  4.00000000	Yariances  Variances  Yariances  Unequal  Equal  Yariances  Yariances	T 1.4207 1.4207 2.4207 2.4207 2.4207 2.42000 0.0000	0F 43-6 44-0	-?rab>iT 1.000 1.000 Prab>iT
The second of th	23 22 4 ar lance 3 MONEY N 23 23 4 ar lance 8 N 23 4 ar lance 9 SELE N 23 7 ar lance 9 SELE N 10	3.11884058 3.4545455 s are equal, f 2.59420290 2.18840580 es are equal, f 2.76086957 es are equal, f 2.76086957 es are equal, f 2.76086957	0.44299909  " = 2.44 OF    1.0586554   0.86977855  F' = 1.48 OF    2.49997682   3.40 Dev   0.40299390   F' = 1.21 OF	0.09444772  (22,21) P  Std Error  0.22074705  0.18127794  (22,22) P  Std Error  0.17107794  0.18826639  (22,22)	2.6666667  rad>F' = 0.0450  minimum  1.00000000 0.33333333  rad>F' = 0.3625  minimum  1.00000000 0.500000000  Prab>F' = 0.6573	#axiaum  1-00000000  1-00000000  1-00000000  1-00000000	Yariances Unequal Equal  Yariances Unequal Equal	T 1.4207 1.4207 2.4207 2.4200 0.0000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000	0F 43-6 44-0	0.1627 0.1627 0.1625
1 2 c	23 22 4 ar i and e 1 moneton m N 23 23 23 23 23 23 23 23 23 23 23 23 23	3.31884058 3.4545455 s are equal, f 2.59420290 2.18840580 es are equal, f 2.76086957 es are equal, f 2.76086957 es are equal, f 2.7516286957 2.7516232 2.85507246	0.44299999	0.09444772  (22,21) P  Std Error  0.22074705  (22,22) P  Contail 27794  (22,22) P  Contail 27994  (18826639  (22,22)  Std Error  0.17107994  0.18826639  (22,22)	2.666666/ rad>F' = 0.0450  minimum 1.00000000 0.33333333 rad>F' = 0.3625  minimum 1.00000000 0.500000000 Prab>F' = 0.6573	#aximum 1-00000000 1-00000000 1-00000000 1-00000000	Yariances Unequal Equal  Yariances Unequal Equal  Yariances Unequal Equal	T 1.4207 1.4207 2.4207 2.4207 2.4207 2.4207 2.4207 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200	0F 43.6 44.0	0.1627 0.1627 0.1625 1.0000 1.0000
12	23 22 4 ar i and e 1 moneton m N 23 23 23 23 23 23 23 23 23 23 23 23 23	3.31884058 3.4545455 s are equal, f 2.59420290 2.18840580 es are equal, f 2.76086957 es are equal, f 2.76086957 es are equal, f 2.7516286957 2.7516232 2.85507246	0.44299999	0.09444772  (22,21) P  Std Error  0.22074705  (22,22) P  Contail 27794  (22,22) P  Contail 27994  (18826639  (22,22)  Std Error  0.17107994  0.18826639  (22,22)	2.666666/ rad>F' = 0.0450  minimum 1.00000000 0.33333333 rad>F' = 0.3625  minimum 1.00000000 0.500000000 Prab>F' = 0.6573	#aximum 1-00000000 1-00000000 1-00000000 1-00000000	Yariances Unequal Equal  Yariances Unequal Equal  Yariances Unequal Equal	T 1.4207 1.4207 2.4207 2.4207 2.4207 2.4207 2.4207 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200	0F 43.6 44.0	0.1627 0.1627 0.1625 1.0000 1.0000
12	23 22 4 ar i and e 1 moneton m N 23 23 23 23 23 23 23 23 23 23 23 23 23	3.31884058 3.4545455 s are equal, f 2.59420290 2.18840580 es are equal, f 2.76086957 es are equal, f 2.76086957 es are equal, f 2.7516286957 2.7516232 2.85507246	0.44299999	0.09444772  (22,21) P  Std Error  0.22074705  (22,22) P  Contail 27794  (22,22) P  Contail 27994  (18826639  (22,22)  Std Error  0.17107994  0.18826639  (22,22)	2.666666/ rad>F' = 0.0450  minimum 1.00000000 0.33333333 rad>F' = 0.3625  minimum 1.00000000 0.500000000 Prab>F' = 0.6573	#aximum 1-00000000 1-00000000 1-00000000 1-00000000	Yariances Unequal Equal  Yariances Unequal Equal  Yariances Unequal Equal	T 1.4207 1.4207 2.4207 2.4207 2.4207 2.4207 2.4207 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200 2.4200	0F 43.6 44.0	-Prob>:T: 1.0000 1.0000
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23 22 42 i and e e 23 23 23 24 r i and e 23 23 24 r i and e 23 25 26 e 26 DEC IO 23 27 28 c	3-11884058 3-4545455 s are equal, f cococococococococococococococococococo	0.44299999	0.09444772  (22,21) P  Std Error  0.22074705  (22,22) P  Contail 27794  (22,22) P  Contail 27994  (18826639  (22,22)  Std Error  0.17107994  0.18826639  (22,22)	2.666666/ rad>F' = 0.0450  Minimum  1.00000000 0.33333333 rad>F' = 0.3625  Minimum  1.00000000 0.500000000 Prab>F' = 0.6573	Maximum 4.00000000  Maximum 3.75000000 4.00000000  Maximum 4.00000000	Yariances Unequal Equal  Yariances Unequal Equal  Yariances Unequal Equal	T 1.4207 1.4207 T 0.0000 0.0000 0.0000	0F 43.6 44.0	-Prab>iT -0.055
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	23 22 (rar iance i concentration i concentrati	3-11884058 3-4545455 s are equal, f cococococococococococococococococococo	Std Oev  1.0566556 0.86737655 F' = 1.48 OF  0.82047056 0.70289390 F' = 1.21 OF  0.839497682 1.09094569 F' = 1.48 OF	0.09444772  (22,21) P  Std Error 0.22074705  (22,22) P  Std Error 0.17107994 0.18826639  (22,22)  Std Error 0.12074779  (22,22)	2.6666667  rad>F' = 0.0450  minimum  1.00000000 0.33333333  rad>F' = 0.3625  minimum  1.000000000 0.500000000  Prab>F' = 0.6573  minimum 0.313333E-01 0.00000E+00  Prab>F' = 0.3654	Maximum 4.00000000 4.00000000 4.00000000 4.00000000	Yariances  Variances  Variances  Variances  Variances  Variances  Variances  Variances  Variances  Variances	T 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207 1.4207	0F 43.6 44.0	-Prab>iT 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000
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For HO  COCCCC  Yariab  GROUP  1  2  For HI  COCCCC  Yariab  GROUP  1  2  COCCC  Yaria  GROUP  1  COCCCC  Yaria  GROUP  1  COCCC  Yaria  GROUP  1  COCCC  Yaria  GROUP  1  COCCCC  Yaria  GROUP  1  COCCCC  Yaria  GROUP  COCCCC  Yaria	N 27 21 21 22 22 22 22 22 22 22 22 22 22 22	3.250000 Z.885714 Inces are equal Example 10	00 0.4872281 29 0.6710333 11, F' = 1.90 can Std O.667 0.5311.63 907 0.5311.63 0.750180 21, F' = 1.99 10210 0.50053 0.0003 0.50053 0.0000 0.5003 Mean Std G.8005	0 - 19945 2 0 - 14043 0F - (20.23) 2 0 - 10843 39 0 - 10843 39 0 - 1599 0F - (21.23) 0ev Std E 184 0 - 1221 438 0 - 1343 2000 0 - 1	ror	######################################	inum 0000  inum 0000  inum 0000  inum 00000  ximum 00000	yariance Unequal Yariance Variance Variance Variance Variance Variance Variance	2.058 2.101	T 62 37 58 44 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	OF P	Pro O
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For HO  CROUP  Tariab  GROUP  Tariab  Taria	N 24 21 21 21 22 22 22 22 22 22 22 22 22 22	3.250000 2.885714 inces are edua 3.10416 2 3.10416 2 2.59090 ances are equ 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.1	00 0.4872281 29 0.6710333 11, F' = 1.90 120 0.531183 907 0.531183 907 0.750180 ai, F' = 1.99 101333 0.59853 10000 0.53033 10000 0.5303 10000 0.5303	9 0.09945 2 0.14043 0F - (20.23)  ev Std Er 39 0.10843 35 0.1599 0F - (21.23)  0ev Std E 3151 0.161 5893 0.181  0F - (21.23)	rar	### ##################################	inus 1000 1000 1000 1000 1000 1000 1000 10	Yariance Variance	2.058 2.101  2.65 2.69  2.11 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2	T	OF P	Production of the second of th
For HO  CROUP  2  For HO  CROUP  2  For HO  CROUP  1  CROUP  CROU	N 24 21 21 21 22 22 22 22 22 22 22 22 22 22	3.250000 2.885714 inces are edua 3.10416 2 3.10416 2 2.59090 ances are equ 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.10416 3.1	00 0.4872281 29 0.6710333 11, F' = 1.90 120 0.531183 907 0.531183 907 0.750180 ai, F' = 1.99 101333 0.59853 10000 0.53033 10000 0.5303 10000 0.5303	9 0.09945 2 0.14043 0F - (20.23)  ev Std Er 39 0.10847 35 0.1599 0F - (21.23)  0ev Std E 3151 0.161 5893 0.181  0F - (21.23)	rar	### ##################################	inus 1000 1000 1000 1000 1000 1000 1000 10	Yariance Variance	2.058 2.101  2.65 2.69  2.11 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2	T	OF P	Pro
For HO CROUP  2 For HO CROUP  4 CROUP  5 CROUP  6 CROUP  6 CROUP  For HO CROUP  7 CROUP  6 CROUP  For HO CROUP  6 CROUP  6 CROUP  For HO CROUP  6 CROUP  For HO CROUP  6 CROUP  6 CROUP  For HO CR	24 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3.250000 2.885714 inces are equal 3.10416 2.59090 ances are equ 3.10216 Ances are equ 4.10216 Ances are equ	00 0.4872281 29 0.6710333 11, F' = 1.90 120 0.531183 907 0.531183 907 0.750180 ai, F' = 1.99 101333 0.59853 10000 0.53033 10000 0.5303 10000 0.5303	0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -	rar	######################################	inus 1000 1000 1000 1000 1000 1000 1000 10	Yariance Unequal Equal Variance	2.058 2.101  2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058 2.058	T	OF P	Production of the second of th
For HO  CROUP  2  For HO  CROUP  2  For HO  CROUP  2  CROUP  CROU	24 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3.250000 2.885714 inces are equal 3.10416 2.59090 ances are equ 2.6000 ances are equ 2.7000 ances are equ 2.7000 ariances are equ 2.7000 ariances are equ 2.7000 ariances are equ 2.7000	00 0.4872281229 0.6710333 11, F' = 1.90  can Std Or 667 0.531183 907 0.750183 ai, F' = 1.99  can Std Or 667 0.531183 can Std Or 6889 0.6204 88889 0.6277 4041, F' = 1.44  Mean Std Mean	0 - (20,23)  ev Std Er  19 0-10864 135 0-10864 135 0-1599  Oev Std E  138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-131 138 0-	rar	######################################	inum 1000 1000 1000 1000 1000 1000 1000 10	Yariance Unequal Equal  Variance	2.058 2.101  2.459 2.69 2.11 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.	T	OF P	Production of the second of th
For HO	24 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3.250000 2.885714 inces are equal secondaria  18LEM  N	00 0.4872281 29 0.6710333 11, F' = 1.90  can Std 0.667 0.5311.63 0.750180 ai, F' = 1.99  can Std 0.667 0.65053 0000 0.50033  Kean Std 0.8005  Wean Std 0.8005  Mean Std 0.8727  Wal, F' = 1.44  can Std 0.8727  cauai, F' = 1.44  concentration of the std of	0 - (20.23)	rar	######################################		yariance Unequal Equal Variance	2.058 2.101  2.459 2.69 2.11 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.	T	OF P	Production of the second of th
For HO  CROUP  1  2  For HO  CROUP  1  2  For H'  CROCC  Varia  GROUP  1  CROCC  Varia  GROUP  For	N 24 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3.250000 2.885714 inces are edua 3.250000 2.885714 inces are edua 3.10416 2.259090 ances are equ 3.10416 2.259090 ariances are equ 3.10416 3.10416 ariances are equ 3.10416 3.10416 ariances are equ 3.10416 3.10416 3.10416 ariances are equ 3.10416 3.10416 ariances are equ 3.10416 3.10416 ariances are equ	00 0.4872281 29 0.6710333 11, F' = 1.90  can Std Or 667 0.531183 907 0.750180 ai, F' = 1.99  can Std Or 667 0.531183 0.000 0.63033 0.000 0.63033 0.000 0.63033 0.600 0.63033 0.600 0.63033 0.600 0.63033 0.600 0.600 0.600  Mean Std	9 0.09945 2 0.14943 0F - (20.23)  2	rar	######################################		yariance Unequal Equal Variance	2.058 2.101  2.058 2.101  2.058 2.059  2.058 2.07  2.058 2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.0	T	OF P 7.50 OF 3.1 4.0 OF 29.9 43.0 OF 34.0 OF	Pro O O O O O O O O O O O O O O O O O O O
For HO  CROUP  1  2  For HO  CROUP  1  2  For H'  CROUP  Varia  GROUP  CROU  For GROUP	N 24 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3.250000 2.885714 inces are edua 3.250000 2.885714 inces are edua 3.10416 2.259090 ances are equ 3.10416 2.259090 ariances are equ 3.10416 3.10416 ariances are equ 3.10416	00 0.4872281 29 0.6710333 11, F' = 1.90  can Std Or 667 0.531183 907 0.750180 ai, F' = 1.99  can Std Or 667 0.531183 0.000 0.63033 0.000 0.63033 0.000 0.63033 0.600 0.63033 0.600 0.63033 0.600 0.63033 0.600 0.600 0.600  Mean Std	9 0.09945 2 0.14943 0F - (20.23)  2	rar	######################################		yariance Unequal Equal Variance	2.058 2.101  2.058 2.101  2.058 2.059  2.058 2.07  2.058 2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.0	T	OF P 7.50 OF 3.1 4.0 OF 29.9 43.0 OF 34.0 OF 34.0	Production of the second of th
For HO  CROUP  1  For HO  CROUP  1  2  For H'  CROUP  1  CROUP  For H'  CROUP  The Croup	N 24 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3.250000 2.885714 inces are edua 3.250000 2.885714 inces are edua 3.10416 2.259090 ances are equ 3.10416 2.259090 ariances are equ 3.10416 3.10416 ariances are equ 3.10416	00 0.4872281 29 0.6710333 11, F' = 1.90  can Std Or 667 0.531183 907 0.750180 ai, F' = 1.99  can Std Or 667 0.531183 0.000 0.63033 0.000 0.63033 0.000 0.63033 0.600 0.63033 0.600 0.63033 0.600 0.63033 0.600 0.600 0.600  Mean Std	9 0.09945 2 0.14943 0F - (20.23)  2	rar	######################################		yariance Unequal Equal Variance	2.058 2.101  2.058 2.101  2.058 2.059  2.058 2.07  2.058 2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.07  2.0	T	OF P 7.50 OF 3.1 4.0 OF 29.9 43.0 OF 34.0 OF 34.0	Production of the second of th
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To Ho: Yari  Cariable: ME  GROUP  Con Ho: Yar	8 3.34 2 2.77 anc es are se acces as SC DN N 127 2.65 ianc es are se acces as STEEN N 13.55	343434 520661 equal, F mean 3676471 5476190 equal, 1	0.58 21 2510 0.91 42 4161 1 - 1.80 0	0.160778 0.194916 0.7 - (21.17) 	143 1.727272 197 0.414181/ Prob>F' - 0.2 107 3.125000 Prob>F' - 0.4 1000000 Prob>F' - 0.4 1000000 Prob>F' - 0.4 1000000 Prob>F' - 0.4 1000000 Prob>F' - 0.4 10000000 Prob>F' - 0.4	241L  241L  241L  23.  241L  23.  241L  23.  241L  23.  241L  24.  25.  26.  26.  26.  26.  26.  26.  26	Maximum -00000000 -87500000	Yariance Unequal Equal  Yariance Unequal Equal	5 - 1 4 - 7	T	0F 29.0 36.0	Pr
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To HO: Yari  Cariable: ME  CROUP  To HO: Yar  Cariable: E  CROUP  To HO: Yar  CAROUP  To HO: Yar  CAROUP  To HO: Yar  CAROUP  To HO: Yar  CAROUP  To HO: Yar	8 3.34 2 2.77 ances are consistent ances A SC CN N 17 3.53 27 2.65 N 17 3.52 23 2.6 N 17 3.55	143434 520661 equal, F 20060000000000000000000000000000000000	Std 0e- 0.314547  6.314547  6.314547  6.314547  6.3496	0.160778 0.194916 0.194916 0.194916 0.19306 0.07636 0.07636 0.07636 0.07636 0.07636 0.07636 0.15306 0.15306 0.15306 0.15306 0.15306 0.15306	1.727272 1.727272 1.97 0.414181 Prob>F' = 0.2 1.000000 Prob>F' = 0.4 1.000000 Prob>F' = 0.4 1.000000 Prob>F' = 0.4 1.000000 Prob>F' = 0.4 1.000000 Prob>F' = 0.4 1.000000 Prob>F' = 0.4 1.000000	02 1 000 000 000 000 000 000 000 000 000	Maximum -00000000 -27500000 -27500000 -27500000 -27500000	Yariance Unequal Equal  Yariance Unequal Equal	5 - 1 - 7	T .560 T . 8105 Z Z 49	0F 29.0 36.0 0F 26.9 38.0	Pr
1	B 1.34 2 2.77 ances are consistent ances A SC CN N 17 3.53 27 2.65 inances are consistent ances N 17 3.52 2.6 inances are consistent ances STEEN N 17 3.5 23 2.6 inances are consistent ances STEEN N	Mean	Std Oc.  0.54 21 2510 0.91 42 4161  1.80  Std Oc.  0.1145 806 0.70 14 54 7  F. 4.96  Std O.  0.24 97 05 0.85 02 96  F. 11.60	0.160778 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.194916 0.1	1. 1. 72 72 72 72 72 72 72 73 73 73 73 73 73 73 73 73 73 73 73 73	241L 241L 23.2 241L 241L 25.2 25.2 25.2 25.2 25.2 25.2 25.2 25.	Maximum -00000000 -57500000	Yariance Unequal Equal  Yariance Unequal Equal	5 - 1 - 7	T	0F 29.0 36.0 0F 26.9	Pro
To HO: Yar is a concentration of the concentration	8 1.34 2 2.77 anc es are es ascessados A SC DN N 17 3.53 27 2.65 ianc es are es ascessados STEE M N 17 3.52 2.65 rianc es are scalados STEE M N 17 3.52 2.65 rianc es are 2.72 2.85 2.85 2.85 2.85 2.85 2.85 2.85 2.8	Mean	Std Oe  0.14580  0.14580  0.14580  0.7014547  6.4.96  Std O  0.249705  0.850296  6.7 11.60	0.160778 0.194916 0F = (21.17) 0F = (21.17) 0F = (21.17) 0F = (20.16)	1.727272 1.727272 1.97 0.414181 Prob>F' - 0.2 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000000000000000000000000000000000	241L  241L  241L  200	Maximum 4.00000000 4.0000000000000000000000000	Yariance Unequal Equal  Yariance Unequal Equal	5.1 4.7 coccocci	T	29.0 36.0 0F 29.0 36.0 0F 26.9 38.0	Pr
To the term of the	8 1.34 2 2.77 anc es are es ascessados A SC DN N 17 3.53 27 2.65 ianc es are es ascessados STEE M N 17 3.52 2.65 rianc es are scalados STEE M N 17 3.52 2.65 rianc es are 2.72 2.85 2.85 2.85 2.85 2.85 2.85 2.85 2.8	Mean	Std Oe  0.14580  0.14580  0.14580  0.7014547  6.4.96  Std O  0.249705  0.850296  6.7 11.60	0.160778 0.194916 0F = (21.17) 0F = (21.17) 0F = (21.17) 0F = (20.16)	1.727272 1.727272 1.97 0.414181 Prob>F' - 0.2 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000000000000000000000000000000000	241L  241L  241L  200	Maximum 4.00000000 4.0000000000000000000000000	Yariance Unequal Equal  Yariance Unequal Equal	5.1 4.7 coccocci	T	29.0 36.0 0F 29.0 36.0 0F 26.9 38.0	Pr 'Pr
To the term of the	8 1.34 2 2.77 anc es are es ascessados A SC DN N 17 3.53 27 2.65 ianc es are es ascessados STEE M N 17 3.52 2.65 rianc es are scalados STEE M N 17 3.52 2.65 rianc es are 2.72 2.85 2.85 2.85 2.85 2.85 2.85 2.85 2.8	Mean	Std Oe  0.14580  0.14580  0.14580  0.7014547  6.4.96  Std O  0.249705  0.850296  6.7 11.60	0.160778 0.194916 0F = (21.17) 0F = (21.17) 0F = (21.17) 0F = (20.16)	1.727272 1.727272 1.97 0.414181 Prob>F' - 0.2 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000 Prob>F' - 0.4 1.000000000000000000000000000000000000	241L  241L  241L  200	Maximum 4.00000000 4.0000000000000000000000000	Yariance Unequal Equal  Yariance Unequal Equal	5.1 4.7 coccocci	T	29.0 36.0 0F 29.0 36.0 0F 26.9 38.0	Pr
	8 3.34 2 2.77 ances are consistent ances A SC DN N 17 3.53 27 2.65 inances are consistent ances STEEN N 17 3.5 23 2.6 riances are consistent ances SPEAK N 18 3.2 23 2.6 ariances ar	Mean	Std Oe  0.14580  0.14580  0.14580  0.7014547  6.4.96  Std O  0.249705  0.850296  6.7 11.60	0.160778 0.194916 0F = (21.17) 0F = (21.17) 0F = (21.17) 0F = (20.16)	1.727272   1.727272	02 4 3 . 2241	Maximum	Yariance Unequal Equal  Yariance Unequal Equal	5 - 1 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3	T	29.0 36.0 0F 29.0 36.0 0F 26.9 38.0	Pr
L Z Z  or HO: Yari  ariable: ME  ROUP  L  For HO: Yar  Quescesses  Yariable: E  GROUP  L  For HO: Yar  GROUP  L  For HO: Yar  COCCOCCOCC  Yariable: !  GROUP  L  GROUP  GROUP  L  GROUP  GROUP  L  GROUP  GR	8 3.34 2 2.77 ances are consistent ances A SC DN N 17 3.53 27 2.65 inances are consistent ances STEEN N 17 3.5 23 2.6 riances are consistent ances SPEAK N 18 3.2 23 2.6 ariances ar	Mean	Std Oc.  0.11 45 806  0.70 14 54 7  6. 4.96  3.12 40 00  0.24 970  0.35 02 96  6. 11.60  5 td U.  5 td U.  7 14 60 00  7 14 7 10  8 10 00  8 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00  9 10 00	0.160778 0.194916 0F = (21.17) 0	1.727272   1.727272	241 241 241 200 300 300 300 300 300 300 300	Maximum	Yariance Unequal Equal  Yariance Unequal Equal  Yariance Unequal Equal	5 5.1 4.7 cooccas:  es  4. 7 cooccas:  1 3 3	T	29.0 29.0 36.0 0F 26.9 38.0	Pr
L Z Z  or HO: Yari  ariable: ME  ROUP  L  For HO: Yar  Quecesses  Yariable: E  GROUP  L  For HO: Yar  Coccosses  Yariable: !  GROUP  L  GROUP  GROUP  L  GROUP  L  GROUP  GROUP	B 3.34 2 2.77 ances are consisted to the consistency of the consistency	143434 520661 equal, F 1526471 15476190 equal, 1 15476190 equal, 1 15476190 equal, 1 15476190 equal, 1 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 15476190 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TIF71 PROCEDUKE 00/30 ccoo de co 00 an 0 naxinum Minimum Std Error Std Dev 3.6666667 3.00000000 0.08466813 0. 33 86 7252 For NO: Variances are equal, F: = 5.25 OF = (20,15) Prob)F' = 0.0020 variable: CLOCX Prob>:T Yariances Std Dev Std Error Mean 1.00000000 3.57407407 For HO: Variances are equal, F' = 3.58 OF = (21,17) Prob)F' = 0.0100 Yariable: RELATE DΕ *2000017 mumixsK Std Error auminin Std Oev Mean 4.6666667 2.00000000 0.21261931 0.20720214 0.90206734 For HO: Variances are equal, F' = 1.11 OF = (20,171 Prob)F' = 0.8385 Variable: PARENT **Variances** Aininum Std Error Std Dev 3.00000003 For HO: Variances are equal, F' = 5.31 DF = (19,17) Proo>F' = 0.0011 Maximum. Yariances Miniaua' Std Error Std Dev 4.00000000 0.10742253 r HO: Variances are equal, F1 = 1.82 OF = (22.17) PrombF' = 0.2114 ·Prab>:T: Variances riable: ASSERT Std Error Std Dev 4.000000000 1.20000000 0.06902159 0.29283380 DF = (22,17) Prop>F' = 0.0002 Prob>!T: Yariances rizble: PROBLEM munixsh Std Error Std Dev 4.00000000 0-10694816 r HO: Yariances are equal, F' = 2.40 OF = (21,17) - Prob>F' = 0.0720 nunixen Yariances riable: GOALS Std Error Std Dev Mean 4.000000000 0.42874646 r NO: Yariances are equal, F' = 3.57 OF = (22,16) ProopF' = 0.0117 . Joe nate to to co on the contract of the con Variances Maximum · iable: NONEY Rinimum Sid Error 3-6319 Std Dev 0.20984139 3.27083333 r HO: Variances are equal, F' + 1.48 OF = (Z1.15) Prob>F' - 0.4418 riable: BEL IEFE Std Error Sta Dev Mean 0.22369812 0.05272615 0.97536352 0.20337735 r HO: Variances are equal, F' = 19.31 OF = (22.17) Prop>F' = 0.0000 Maximum Rinimum riable: DECIDE Std Error 4.00000000 0.10779361 r HO: Yariances are equal, F' = 4.67 OF = (22,17) Proo>F' = 0.0021 #uninu riable: 1085 Sta Error 4.00000000 Std Ver 0.09160695