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Factor Structure of Myola Parent-grandparent as Educator Questionnaire (MPGEQ) Childer Version

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Abstract: The roles of parents and grandparents in children's development are documented in the literature. The role played cannot be underrated in the totality development of children, from elementary schools to tertiary institutions. The enormous contributions indicate an urgent need for a wider instrument that covers a wide range of parent and grandparent participation towards children and grandchildren's upbringing. Thus, this paper bridged the identified gap in the literature, introduced MYOLA parent-grandparent as educator questionnaire (MPGEQ) Children version, and examined its validity and reliability claims. A sample of 338 UPSI undergraduate students participated in this study applying the Principal Components Analysis, Cronbach's alpha, and Frequency Analysis to explore the psychometric properties of the MPGEQ and to describe demographic information about the research sample. The results of the PCA and Cronbach's alpha show that the MPGEQ - Children version is valid and reliable with a total number of 64 items and eleven-factor structure. The total variance explained by the PCA is 65 percent. Noticeably, reliability test also reached a satisfactory level. These indicate that the present study significantly contributed to parental instrument development efforts and produced a diagnostic instrument to comprehensively measure parent-grandparent contributions in raising children and grandchildren.

Keywords: MPGEQ, questionnaire, parent-grandparent, contribution, educator.

INTRODUCTION

The role of parents and grandparents in children's holistic development is observed in the literature. To develop an instrument that can determine parent-grandparent roles in children's development comprehensively is highly needed to understand the whole process of how children's characters were developed in various aspects. In a wide range, attempt to develop measures of parent-grandparent role in children totality growth was first mentioned by Muhammed Yusuf (2011) and later, the psychometric properties of the Measurement Analysis of Parent-Grandparent as Educator Questionnaire (PGEQ -

Parent Version) were published (Muhammed Yusuf 2016). As such, the aim of this research is to come-up with another valid and reliable instrument known as MYOLA parent-grandparent as educator questionnaire (MPGEQ) Children version which can be used to measure parent-grandparent contribution towards children-grandchildren growth in a broad scope.

Additionally, there are several issues associated with parental roles to nature children, some of the related matters were highlighted in this study (Cuddy *et al.* 2010; Muhammed Yusuf 2014, 2015, 2016)) For instance, African American community and grandparents use the religious as a resource in raising their grandchildren. Although African American cathedrals offer more health education programs than other ethnic congregations (Arvidson and Novotni 2011; National Council of Churches, 2007), the religion has been underutilized in health promotion activities for adolescents (Campbell *et al.*, 2000). In one survey of 6,037 churches, more than 65% reported offering health education programs (National Council of Churches, 2007; Coyne-Beasley and Achenbach 2000). According to Manuscript, Disorder, and Technology (2009) there has been very little research on the problems that African American grandparents have in communicating gender behavioral attitude to their adolescent grandchildren. Although this study is an important first step in identifying these problems but, several study limitations should be noted. First, the sample included only grandparents and grandchildren who were active church members; therefore, the findings cannot be generalized to those who are not active members of a church. Second, participants were not randomly selected; thus, there may have been some bias in the communication responses. Third, the current findings only account for group responses; analysis of differences in individual dyads would have been valuable, but this was not possible because of the way data were collected.

Nevertheless, the study provides that communication process of grandparents and their adolescent grandchildren, give an important insight into the state of family communication, particularly intergenerational family communication, among African Americans. The results suggest that grandparents may need assistance in deciding what and when to discuss highly sensitive education topics with their grandchildren so that they are not embarrassed by these discussions. Although the present findings have opened up an important area of research, additional studies using larger and more representative samples would add to the generalizability of these findings.

Evidence shows that parents and family members' involvement in sex education reduces sexual permissiveness as well as the likelihood of teenagers engaging in risky sexual behaviors, and teen (DiClemente *et al.*, 2001).

The role of grandparent in communication and education fosters positive relationships in the family (Hutchinson, Jemmott, Jemmott, Braverman, & Fong, 2003; Whitaker & Miller, 2000) and tailors age-appropriate education messages to children. African American parents have been pivotal to discussions of sexuality education issues with daughters (Hutchinson *et al.*, 2003; O'Sullivan, Meyer-Bahlburg, & Watkins, 2001), and fathers with sons (Cornelius & LeGrand, 2007). However, sex education and communication between grandparents and grandchildren is minimal. Because of generational differences, sex-related discussions between grandparents and grandchildren present a variety of challenges that grandparents may feel unprepared for (Brown *et al.*, 2000). Complicating the problem is a lack of resources available to grandparents to prepare them for some newly educational related discussions with their grandchildren (Brown *et al.*, 2000).

One of the topics examined in the communication process was sexual abstinence. Research indicates that sexual abstinence education programs have not been effective in producing statistically significant changes in adolescents' sexual behavior (Hauser, 2004). This finding emphasizes the participants' recommendation that a church-based parental educational program should be for "real" and include safer sex information for sexually inactive and active teens. This indicates a need to established or come-up with a very measure parent/grandparent educator scale.

According to (Kropf & Burnette, 2003) who studied on Grandparents as Family Caregivers, Lessons for Intergenerational Education found that Grandparent-headed families provide a rich instance for analyzing social and family policy. Students often have difficulty grasping the connection between public policies that emanate from macro social and economic forces and the micro-level conditions of individual and family lives. Families headed by grandparents afford them an opportunity to examine policies across the domains of child welfare, aging, housing, health care, and income maintenance. And, since numerous policy arenas impact these families, they provide a rare occasion for analysis of gaps in policy that place these families at risk of "falling through the cracks." Grandparent-headed families also illustrate the importance of examining policies across. Federal, state and local jurisdictions. The legal status of grandparent-grandchild relationship (e.g., Informal care, custody, guardianship, adoption, or kinship foster care), for example, may depend on the locality in which they live and their relationship largely determines whether and to what extent the family is entitled to various resources and the power to make autonomous decisions.

Finally, students also struggle with the value assumptions inherent in social policy. Grandparents as Family Caregivers extend the above mentioned example; the values that underpin the grandparents' eligibility for various sources of public support have been hotly debated. Specifically, assuming that most grandparent caregivers will share role-related needs, should their eligibility for services vary by the legal status of their relationship with their grandchild? Discussions of this debate could focus on the point at which a family is treated as a legal unit, with attendant rights and responsibilities.

Narrative accounts of the experience of the children can serve to highlight relationships with family members, such as the marital dyad, grandparent-non-custodial grandchild, and the grandparent-parent-child relationship. Interactions with social institutions in the community might also be stressed, such as grandparents' relationship to the school setting and how a grandchild perceives this connection.

On the other hand, (Kenner *et al.* 2004) discussed their report on the Intergenerational learning between children and grandparents in East London, the impact of Computer activities show a greater balance between child and grandparent Involvement , the report found that grandparents were often introduced to computer activities through the expertise of their grandchildren. The young children also show interest in the help and support of their grandparents.

METHODOLOGY

Instrument

This research introduced MYOLA parent-grandparent as educator questionnaire (MPGEQ) Children version. Age, gender, level of education, state of origin, nationality, occupation, religion, and ethnic of the

participants were assessed as a demographic section of the questionnaire. The second part of the questionnaire consists of items measuring parental control. The third part of the questionnaire consists of 13 generated dimensions through an intensive interview with undergraduate children and grandchildren on how they were raised up by their parents and grandparents.

The participants were divided into several groups and interviewed, the information collected were noted, categorized, arranged, itemized, factorized, and finally labelled as follows: 1) religious thought, 2) superstition, 3) Culture, 4) morality, 5) socialization, 6) language, 7) communication, 8) education, 9) cognitive, 10) emotion, 11) economy, 12) skills, and 13) internationalization. The measure consisted of 195 items concerning on experiences of respondents on the role play by parents and grandparents in their developmental stages. Each with a 5-point Likert response scale of Strongly Disagree (1), Disagree (2) Neutral (3), Agree (4) and Strongly Agree (5). The scaling for parental control section includes not at all (1), Seldom (2), Occasionally (3), Often (4) Very often (5).

Population and Sample

This study adopted a quantitative method of data analysis processes. The population of this study consisted UPSI undergraduates students from different part of Malaysia and international using the convenience sampling. With due to the difficulty associated with getting the list of the respondents and secure their availability to participate in the survey, the researcher opted for this method of sampling, a requirement necessary for probabilistic sampling method. This, coupled with the fact that some respondents are willing to fill the survey at any convenient place like a library, canteen, and at coffee shops.

Data collection

On the UPSI new campus, Proton city, Tg. Malim, more than 500 questionnaires were distributed to undergraduate students who voluntarily participated in the study. The completed questionnaires were then collected by the researchers either from the respective students directly or who help in the distribution of the questionnaire to the respondents. Only 338 samples responded (67.6%) including very few missing information, especially on the demographic part ($n = 338$). The sample size was sufficient and adequate for factor analysis and other statistical analysis.

Data analysis

To examine the lived-experience of children on the role play by their parent and grandparent in their developmental stages and to determine the experience and the underlying dimensions of their responses, the study applied the principal component analysis (PCA) with varimax rotation and reliability test using the SPSS version 18 to produce the simplest factor structure. The KMO Bartlet test of sphericity criteria test were used to establish the factorability of the items. The variance explained and eigen value of 1 and above were used to decide on the number of factors to be retained. Guadagnoli and Velicer's (1988) opined that (a) the minimum number of items per factor should be four and (b) factors loaded with fewer than four items should not be retained. However, other literature suggests that factor with three items can be considered. As such, the position maintained in this study is that factor with fewer than three items is not retained.

Results of Demographic information

Table 1 shows the distribution of respondents by age. The greatest number of respondents aged 20-25 years accounted for 277 respondents, 82% of the total surveyed. The second highest distribution of the age of 26-30 years accounted for 8 respondents, 2.4% and the third distribution of respondents' age 36-40 and above years 3% for 1 respondent. Finally the missing value from the system reads 51 (15.1%). Based on this study, it appears that the most respondents are female which represents 82 (62.1%) while male respondents 82 (24.3%), in this regard missing represents 46 (13.6%). Finally the missing value from the system reads 46 (13.6%). Table 1, also explains the number of respondents according to their nationality. Based on this study, it appears that the most respondents are Malaysian which represents 272 (80.5%) while none Malaysian respondents 18 (5.3%), in this regard missing represents 47 (13.9%). However; the missing value from the system reads 47 (13.9%).

Table 1
Age distribution

<i>Age Group</i>	<i>Frequency</i>	<i>Percent</i>
20-25	277	82.0
26-30	8	2.4
31-35-	1	.3
36-40-	1	.3
Total	287	84.9
Missing System	51	15.1
Total	338	100.0
Gender	Frequency	Percent
Male	82	24.3
Female	210	62.1
Missing	46	13.6
Total	338	100.0
Nationality	Frequency	Percent
Malaysian	272	80.5
Non-Malaysia	19	5.6
Missing	47	13.9
Total	338	100.0

Table 2 shows the number of states where the respondents came from. Based on this study, it appears that the highest state is Kelantan which respondents 34 (10.1%), Terengganu is the second largest where it represents 27 (8%), the third largest is Tg. Malim - Perak while it represents 26 (7.7%). Sabah state represents 25 (7.4%), the least states are Khomas region 1 (3%), Oshakati1 (.3%) and Rundu1 (3%), in this regard the missing represents 93 (27.5%).

Table 2
Respondents' State

<i>State</i>	<i>Frequency</i>	<i>Percent</i>
Perak	26	7.7
Kl	5	1.5
Pahang	10	3.0
Melaka	7	2.1
Kelantan	34	10.1
Sarawak	18	5.3
Sabah	25	7.4
Terengganu	27	8.0
Penang	9	2.7
Namibia (A country)	13	3.8
Khomas (Region)	1	.3
Oshakati (Region)	1	.3
Rundu (Region)	1	.3
Kedah	23	6.8
Johor	18	5.3
Perlis	2	.6
Negeri Sembilan	6	1.8
Selangor	18	5.3
Bandung (Indonesia)	1	.3
Total	245	72.5
Missing System	93	27.5
Total	338	100.0

ANALYSIS OF PARENTING CONTROL APPROACH

Table 3 above shows beating frequency, the highest frequency is 92(27.2%), second largest is 83(24.6%) third and four largest are 64(18.95%) and 34 (10.1%) respectively, the missing value from the system shows 55 (16.3%).

Table 3
Beat Me Frequency

<i>Beat</i>	<i>Frequency</i>	<i>Percent</i>
Frequency	83	24.6
Frequency	92	27.2
Frequency	64	18.9
Frequency	34	10.1
Frequency	10	3.0
Total	283	83.7
Missing System	55	16.3
Total	338	100.0

Table 4 shows the number of respondents according to their usage of a harsh way to control them, the highest frequency shows 102 (30.2%), second highest percentage is 80 (23.7%), and the lowest percentage shows 6 (1.8%) which is expelling is the least harsh way to control the kids. Finally the missing value of this data is 62 (18.3%).

Table 4
Using Harsh Way to Control Me Frequency

<i>Hash way</i>	<i>Frequency</i>	<i>Percent</i>
Frequency	102	30.2
Frequency	80	23.7
Frequency	78	23.1
Frequency	10	3.0
Frequency	6	1.8
Total	276	81.7
Missing System	62	18.3
Total	338	100.0

Table 5 shows the number of respondents according to their pampered approach, the highest frequency reads 87(25.7%) second highest percentage shows 78(23.1%), the lowest percentage shows 9 (2.7%) which is explaining is the least pampered way to control the kids. Finally, the missing value of this data is 61(18. %).

Table 5
Pampered me Frequency

<i>Pampered</i>	<i>Frequency</i>	<i>Percent</i>
Frequency	60	17.8
Frequency	78	23.1
Frequency	87	25.7
Frequency	43	12.7
Frequency	9	2.7
Total	277	82.0
Missing System	61	18.0
Total	338	100.0

Table 6 explains the beating level, according to the table the highest level of beating shows 64(18.9%), second highest percentage shows 60(17.8%),the lowest percentage shows 9 (2.7%) which is explaining is the least beating level of the kids. Finally, the missing value of this data is 75(22.2%).

Table 7 reads the number of respondents according to their pampered level approach, the highest frequency reads 76(22.5%), second highest percentage shows 75(22.2%), the lowest percentage shows 9 (2.7%) which is explaining is the least pampered way to control the kids. Finally, the missing value of this system is 80 (23.7%).

Table 6
Beat me Level

<i>Beat</i>	<i>Frequency</i>	<i>Percent</i>
Level	108	32.0
Level	60	17.8
Level	64	18.9
Level	22	6.5
Level	9	2.7
Total	263	77.8
Missing System	75	22.2
Total	338	100.0

Table 7
Pampered me Level

<i>Pampered level</i>	<i>Frequency</i>	<i>Percent</i>
Level	76	22.5
Level	75	22.2
Level	69	20.4
Level	29	8.6
Level	9	2.7
Total	258	76.3
Missing System	80	23.7
Total	338	100.0

Results of Exploratory Factor Analysis (EFA)

Table 8 shows the results of the exploratory factor analysis (EFA). The analysis resulted in eleven constituents of Parent-Grandparent as Educator Questionnaire. The factor loading for each Factor, are relatively high with each item having a factor loading $>.50$. Item with factor loading less than 0.5 were left out. The next item from the output is the KMO and Bartlett's test, KMO measures sampling adequacy, which should be $>.50$ for a satisfactory factor analysis proceed.

The KMO measure results (Table 2) indicate the value of .811, Bartlett's test of sphericity was significant; $<.050$ while the total variance of the study yield 65%. Further, out of the 195 original variables or items, only 64 of them have the total-item correlation from moderate to high and therefore, 131 items were excluded from the principal component analysis (PCA). In addition, the correlation matrixes also showed a pattern of relationships among the remaining 64 items with the degree of inter-item correlations were at moderate level. The inter-item correlations suggested the existence of underlying factors affecting the variability of the students' responses in understanding the concept of parents and grandparents as educator. As such, only 64 items are psychometrically sound at the level PCA to be the measure of parents and grandparents as educator questionnaire.

Table 8
Principal Component Analysis

<i>Code</i>	<i>Items</i>	<i>Factor Loading</i>
ED1	Education I must complete my education	.694
ED2	I need to be a good student	.652
ED3	Modeling an educated person motivates one to success	.620
ED4	With education one will have a bright future	.582
ED5	Educated person has a great future	.557
ED6	I was taught to behave well in school	.556
ED7	I strive hard to achieve high grade academic results	.544
ED8	I should be cooperative with classmate	.543
ED9	I learnt how to count at an early stage of my life	.517
		Cronbach Alpha0.882
CO1	Cognitive Communication solves negative emotion	.578
CO 2	I should think deeply why people are angry with me	.577
CO 3	Amendment of the mistakes is a sign of intelligence	.565
CO 4	Reacting base on emotional feeling could mislead	.523
CO 5	I should understand others sensitive consumptions	.513
		Cronbach Alpha0.732
SO1	Social I must speak with my teacher about my problems	.567
SO2	I learnt to make supplication before studying	.558
SO3	I am fond of discussing learning problems with classmates	.545
SO4	Revising the lesson at home before going to school is an obligation	.534
S05	Moderately, I should close with my neighbor	.517
SO6	Sometimes, I informed to visit my neighbor	.512
		Cronbach Alpha0.746
CU1	Culture Teaching family history will guide the younger generation	.637
CU2	I am taught to eat traditional dishes	.617
CU3	I was taught how custom is important in my daily life	.593
CU4	I am taught to aware of the inherited tradition	.573
CU5	I should maintain the family tradition	.562
CU6	I am taught to develop a sense of loyalty	.551
CU7	I am encouraged to learn about social norms	.550
CU8	Telling me ethnic history before and after independence	.547
		Cronbach Alpha0.858
IN1	Internalization Visiting beautiful places around increases knowledge	.610
IN2	Learning the history of other countries add to knowledge	.584
IN3	I should teach people around the world my native language	.564
IN4	I should teach people around the world my culture	.561

contd. table 8

Code	Items	Factor Loading
IN5	Learn about other countries, especially their life style	.514
IN6	I should know what is happening around the world	.510
Cronbach Alpha0.837		
EC1	Economy Inherited valuable things such as land must be used properly	.619
EC2	I was forbidden to waste food	.608
EC3	Household expenses should be managed well	.594
EC4	I was forbidden to fight over the inheritance	.556
EC5	I was taught how to make good budget	.545
EC6	I should buy important thing first when going for shopping	.509
Cronbach Alpha0.821		
LA1	Language I should learn my mother tongue in order to preserve it	.597
LA2	Through mother tongue I can learn many languages	.513
LA3	I should preserve my language, because it is our dignity	.500
Cronbach Alpha0.665		
SP1	Superstition Burying spoon with a baby's placenta makes her good cook	.784
SP2	Virgin that dream about snake bite will soon have a suitor	.730
SP3	Dried remnant food in hand reduces mother -in-law love	.729
SP4	If a virgin sit on stairs marriage request is coming to	.724
SP5	Whistling in the house invites snake	.723
SP6	The sound of crows is a signal that someone will die	.611
SP7	Raining during summer is a sign for tiger delivery	.609
SP8	Hanging white cloth outside at night attracts ghost	.536
Cronbach Alpha0.879		
RG1	Religion I was taught how to pray since a young age	.723
RG2	I was reminded to pray during periods of difficulty	.630
RG3	I learnt religion since young age	.618
RG4	I was taught to pray for my family	.604
RG5	I was encouraged to follow the order and rules of religion	.556
RG6	My parent always takes me to the place of worship	.551
RG7	I was taught to be grateful in all situations	.547
Cronbach Alpha0.808		
MO1	Moral There must be a boundary between male and female	.540
MO2	I am always advised to read the noble book such as the Qura'n	.519
MO3	Avoid close relationship with opposite sex	.511
Cronbach Alpha0.654		
EM1	Emotion It is good to create a loving family	.659
EM2	It is good to create a caring home and environment	.617
EM3	My family first	.566
Cronbach Alpha0.811		

TVE total variance explain % = 65.422 47.80 Kaiser-Meyer- Olkin Measure of Sampling Adequacy = .811 Bartlett's Test of Approx. Chi-Square = 47921.455 Sphericity df = 17391 Sig = .000

DISCUSSION

The final eleven-factor structure obtained from the analysis suggests that the MPGEQ is a multidimensional scale looking into various dimensions of parents and grandparents as educators' questionnaire. The use of principal component analysis (PCA) in analysing the responses gathered from the MPGEQ has helped us to identify the emerging of eleven new themes. All the factors relate to various methods or strategies that are used by parents and grandparents in fulfilling the balance development of their children. According to Hutchinson, *et al.* 2003; Whitaker & Miller, 2000 parents' role in educating children cannot be undermined in the present day. According to this study, the strategies used by parents focus mainly on the application of ranges of education, cognition, socialization, culture, internationalization, economy, language, superstition, religion, emotion, and moral as ways of educating the children to build holistic personality in them. These methods or strategies are not in conflicts with the previous studies such as that of Brown *et al.*, (2000) and Che Noraini & Sharifah (2012). Similarly, Muhammed Yusuf (2016) has offered the Parent-Grandparent as Educator Questionnaire (PGEQ) Parent Version. Accordingly, the PCA accounted for 75.7 percent of total variance explained while the CFA indicates valid 10-factor model reliably measure religious thought, superstition, culture, morality, socialization, economy, education, language, internationalization, and skill, $\chi^2(9) = 27.560$, CFI=0.986, TLI=0.929, RMSEA=0.078, GFI=0.985 and AGFI=0.906 suggesting satisfactory measurement model fit for the Parent-Grandparent as Educator Questionnaire (PGEQ) Parent Version.

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