

Cultural Sensitivity of the Interpersonal Reactivity Index in Empathy Measure

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ABSTRACT

The Interpersonal Reactivity Index (IRI) is one of the commonly used self-report scales to measure empathy. Davis (1980) reported a four-factor structure in empathy in developing this scale, including empathic concern, perspective taking, personal distress, and fantasy. Empirical studies among different populations with Western culture provided solid and stable support to this four-component scale, such as adults in France and America, college students in Belgium and Chile, and adolescents in Dutch. Although IRI is a popular instrument for measuring parental empathy in most studies, exploring its factor structure among parents as a sample is quite rare. Moreover, the number of factors in its structure is not stable among the Chinese population. For example, it reported a hierarchical four-factor model among both general population and clinical patients with schizophrenia, but a bi-factor model among Chinese students in Mainland China. On the other hand, a three-factor model, where a new component, namely empathy scale, is a combination of both emotional and cognitive aspects of empathy, was reported among Chinese students in Hong Kong. Further investigation of its factor structure by developing a Chinese version with Chinese parents as samples to fill up this research gap is deemed necessary.

keywords: empathy, factor structure, Interpersonal Reactivity Index, parental empathy

1. Introduction

Children are important assets of society. Their success or failure depends on what environments their adults provide to them. Psychologists, social workers, and educators have explored many effective ways to help children grow and learn academically and socially. Parents are also vital persons besides teachers who play a significant role in children's intellectual learning and social development. Bradley (2007) proposed six fundamental parenting tasks to help children develop effectively. They include the assurance of physical safety, a well-structured daily routine that a child needs to follow, provision of social connectedness to encourage their social development, clear instructions to facilitate children's learning, necessary monitoring with surveillance, and provision of love as guidance and discipline. Parents play a critical role model in the process of parenting. However, the query on which parenting style is more effective in childhood education is the core question most parent educators would like to know.

Recent studies have empirically supported the claim that the authoritative parenting style is the most effective in different developmental outcomes among the four parenting styles (Donath et al., 2014; Hartman et al., 2015; Hoffmann & Bahr, 2014; Tondowski et al., 2015). As proposed by Baumrind (1971) and Maccoby & Martin (1983), these four different parenting styles are authoritarian, authoritative, permissive, and uninvolved. These categorizations depend on the strength of the dimensions of parental demandingness and responsiveness in the

process of parenting. Parents in the practice of authoritative parenting style are high in both dimensions of demandingness and responsiveness. These parents encourage communication, allow autonomy to their children, and provide a platform for sharing and negotiation. These parents are caring, open-minded, supportive to their children, and free to let their children make choices with appropriate boundaries and demanding but not controlling (Ross & Hammer, 2002). In other words, they are more responsive to their children's needs, more empathic, and have more parental warmth.

While the dimension of responsiveness, which closely relates to parental empathy, is vital in parenting, empirical studies supported that parents with more parental warmth were more empathic and more able to be child-oriented in child discipline. Studies also reported a relatively consistent and strong association that when their parents were more empathic, their children were more socially developed in comparison with those whose parents were less empathic (Arzeen, Hassan & Riaz, 2012). Similarly, children were reported to have more mental or behavioral problems in either internal or external misconducts when their parents were comparatively less empathic (Zhou et al., 2002). Given this, parental empathy is a crucial parental attribute in the process of parenting, and it plays a crucial role in child development. In other words, knowing the way to improve the quality of parental empathy can help nurture the children, especially in the social aspect. However, what is the construct of parental empathy and its measurement? This question still seems to be unanswered clearly. Knowing the factor structure of parental empathy is helpful to let parent educators the direction of how to help parents improve the quality of parental empathy, and it is an essential milestone in childhood education. In this study, the focus of exploring the factor structure of parental empathy through literature review is the theme of this study.

2. Materials and Methodology

Defining and measuring parental empathy is a technical issue that all researchers need to consider. Parental empathy can be defined as the parental attribute to affectively share a child's feelings and cognitively understand a child's thoughts (Feshbach, 1987). To measure empathy, the Interpersonal Reactivity Index (IRI), which was developed by Davis (1983), is one of the most popular self-reported instruments to measure the strength of empathic level among adults and older adolescents.

Davis (1983) proposed a four-factor model in this index to measure empathy, which includes empathic concern, personal distress, fantasy, and perspective-taking. Empathic concern, personal distress, and fantasy measure affective empathy, while perspective-taking measures cognitive empathy. Although IRI is originally designed to measure the individual's empathic capacity, this index has been commonly used to measure the strength of parental empathy in most research studies of child development or childhood education. Despite its four-factor model, previous studies reported different results with populations between the East and the West. Extracted from social sciences databases, such as SCOPUS and APAInfo, the number of researches to study the psychometric properties of this index is quite rare, which is about 26 peer-reviewed articles published. In these studies, the sample came from quite diverse populations, for example, university students, adolescents, adults, and teachers from general populations, and patients with schizophrenia from clinical populations. On the other hand, among these 26 peer-reviewed articles, most of these studies came from Western countries, while only five came from Asian countries. All of them used factor analysis to study the factor structure of this index. The results were quite diverse.

3. Results

The analysis was conducted with two focuses. One was to explore any difference in factor structure among the studies in general, while the other was to compare the studies between the data collected from the West and the East.

To explore the difference from the first perspective of comparing all studies in general, after analyzing these 26 articles, most of the studies showed a four-factor model after confirmatory factor analyses, which was the same as the original model proposed by Davis (1983). The result is summarized in Table 1. However, some of the studies differed from the original factor structure. For example, Bonfils et al. (2022), Péloquin & Lafontaine (2010), and González et al. (2014) reported a 2-factor model where these two factors were perspective-taking and empathic concern. They might more or less represent cognitive empathy and affective empathy respectively. However, some other studies reported a 3-factor model, such as Alterman et al. (2003), with data collected from a Western country and Siu & Shek (2005) from an Eastern country. The three factors reported in these two studies were the same: fantasy, personal distress, and a new single empathy factor, which was a combination of perspective-taking (the cognitive aspect of empathy) and empathic concern (the emotional aspect of empathy). In addition, one study reported a completely different factor structure from the original one that it was a 5-factor model (Ortiz et al., 2011). These five factors were intellectual empathy, positive emotional empathy, disorganized emotional empathy, virtual empathy, and impassiveness.

When these studies were re-analyzed again from the second perspective by taking cultural diversity into consideration, where it was to comparing the data collected from the Western countries with those collected from the Eastern countries, a slight difference in between was reported (Table 1). The majority of the studies from the Western countries were to report a 4-factor model with data collected from a general population, such as college students or adolescents. However, only a few reported a 2-factor or 3-factor model when data were collected from a pool of clinical populations, such as schizophrenic patients or methadone maintenance (MM) patients. Similarly, most of the studies conducted in Eastern countries were a 4-factor model with data collected from general populations. However, it was also to report a 4-factor model with data from clinical populations (Chiang et al., 2014; Zhang, Dong & Wang, 2010) in Chinese communities but not a 2-factor model as reported from the data collected from the West (Bonfils et al., 2022).

Table 1.

The summary of different psychometric studies on the Interpersonal Reactivity Index.

| Source of the study | No. of factors in the model | Name of the factors | Samples | Country |
|--|-----------------------------|--|-------------------------------------|---------|
| Western countries | | | | |
| Bonfils et al. (2022) | 2 | Perspective-Taking, Empathic Concern | Patients with high schizotypy | USA |
| Péloquin & Lafontaine (2010) | 2 | Dyadic Perspective Taking, Dyadic Empathic Concern Empathy factor (Empathic Concern + Perspective Taking), | adults in a romantic relationship | USA |
| Alterman et al. (2003) | 3 | Fantasy, Personal Distress | methadone maintenance (MM) patients | USA |
| Chrysikou et al. (2016) | 4 | | adults | USA |
| Pulos, S., Elison, J., & Lennon, R. (2004) | 4 | | college students | USA |
| Carey et al. (1988) | 4 | | adults | USA |

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|--|---|--|--|--------------|
| Garcia-Barrera et al. (2017) | 4 | | adults | Spain |
| Chaparro Clavijo, R. A., & Pineda-Roa, C. (2020) | 4 | | university students | Spain |
| Arenas Estevez et al. (2021) | 4 | | university students | Spain |
| Lucas-Molina et al. (2017) | 4 | | college students | Spain |
| Ortiz et al. (2011) | 5 | Intellectual empathy, Positive emotional empathy, Disorganized emotional empathy, Virtual empathy, Impassiveness | young adolescents | Spain |
| Gilet et al. (2013) | 4 | | adults | France |
| Albiero, P., Ingoglia, S., & Lo Coco, A. (2006) | 4 | | adolescents (10-20 years old) | Italy |
| Ingoglia, S., Lo Coco, A., & Albiero, P. (2016) | 4 | | adults | Italy |
| Engeler & Yargıç (2007) | 4 | | university students | Turkey |
| De Corte et al. (2007) | 4 | | healthy adults | Netherland |
| Hawk et al. (2013) | 4 | | late adolescents & mothers | Netherland |
| Golbabaei et al. (2022) | 4 | | adults | Iran |
| González et al. (2014) | 2 | Perspective taking, Empathic concern | university students | Chile |
| Fernández et al. (2011) | 4 | | college students | Chile |
| Sampaio et al. (2011) | 4 | | adults | Brazil |
| Eastern countries | | | | |
| Rong et al. (2010) | 4 | | college students | China |
| Zhang, Dong & Wang (2010) | 4 | | schizophrenic patients and healthy subjects | China |
| Huang et al. (2012) | 4 | | teachers | China |
| Chiang et al. (2014) | 4 | | college students, schizophrenic patients, adults | Taiwan |
| Siu & Shek (2005) | 3 | Empathy (combine cognitive and emotional aspects of empathy), Fantasy, Personal distress | University & high school students | Hong Kong |

4. Discussion

Interestingly, the factor structure of the Interpersonal Reactivity Index was relatively stable to give a four-factor structure among normal populations. As the construct of this index was initially to measure the empathic level in general populations, to measure empathy level by using general populations, such as university students or adults, can come up with a four-factor model. However, the factor structure coming from clinical populations remains unsure between cultures from the West and the East. A 2-factor model versus a 4-factor model resulted between the West and the East. The data from clinical populations in Eastern countries remained under a 4-factor structure. One may wonder if the characteristics of the population under study matter and if cultural influence affects the expression of empathy.

As far as the psychometric properties of the Interpersonal Reactivity Index are concerned, a study with a sample of parents to measure parental empathy is very rare. Most of them were conducted with parents as subjects in Western countries, such as Spain (Pérez-Albéniz et al., 2003) and Sweden (Cliffordson, 2001). No research on studying the psychometric properties of the Interpersonal Reactivity Index with parents within the Chinese population. When this

index has been popularly used to study parental empathy, a systematic study of its psychometric properties by inviting parents as subjects within the context of Chinese culture is deemed necessary.

Furthermore, it seems that the IRI may be culturally sensitive in some particular populations, such as schizophrenic patients. It is still unknown if the measure of empathy is also sensitive among parents. The authoritarian parenting style is believed to be different between Western and Eastern practices. For example, in Western culture, parents with authoritarian parenting are believed to value obedience, restrict autonomy, use strict rules, and emphasize discipline and obedience without allowing discussion or negotiation (Baumrind, 1966). These parents are low in parental warmth and lack responsiveness and acceptance of their children. However, in Eastern countries, such as Mainland China, the practice of authoritarian parenting style is different. The concept of parental control in authoritarian child-rearing refers to 'guan,' which means "to govern" (Tobin, Wu & Davision, 1989). Despite having the meaning of "control" and "restrict," there is a positive connotation of "to care" and "to love." In other words, Chao (1994) proposed that the practice of authoritarian parenting style within the concept of guan in the Chinese community refers to deep concern and care with high parental involvement, although it also includes the parental belief in firm control and governance. Because of this, the concept of parenting practice can be culturally dependent, and the concept of parental warmth and care may also be culturally sensitive. Especially when there is no systematic study on the factor structure of the Interpersonal Reactivity Index in the Chinese community, while there is evidence to support the claim that parental belief in control and restriction is culturally dependent, a study of the psychometric properties of the Interpersonal Reactivity Index within the population of parents in future is necessary.

5. Conclusion

Children are the future pillar of society. They need to be nurtured with care and concern. The way of effective parenting is a very crucial topic to help our children grow and develop well both physically and mentally. As many studies have supported a strong association between parental empathy and children's social development, a good and reliable measuring tool on parental empathy is essential. While the overview of previous literature on studying the psychometric properties of a popularly used index, the Interpersonal Reactivity Index, reflects that the factor structure of this index is not very stable to give a four-factor model. The structure of its factor model may depend on the characteristic of the population and cultural diversity. Therefore, conducting systematic research on studying the factor structure of the Interpersonal Reactivity Index within the context of parents as subjects in the Chinese community may help make some blueprint on how to improve parenting, especially the way of developing parental empathy, in the field of childhood education.

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