Literacy and Fertility Across OECD Nations

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Understanding the processes that influence birth rates for individuals and populations is of great interest to the medical, public health, and demographic fields as well as national and international policy makers. A strong link between an individual's literacy skills and their adult health has been documented, however the relationship between literacy and women's reproductive health remains understudied. The little work that has been done has provided evidence for an association between literacy and total childbearing in the developing world, as well as between literacy and likelihood of grand multiparty (five or more births to one woman) in the U.S. Another limitation of past research is the lack of attention to the mechanisms by which literacy might work to impact childbearing. In the current research we sought to assess: **1) the relationship between literacy and childbearing across OECD and partner nations, and 2) the potential mediating and moderating effects of literacy on self-reported health, a pre-disposing factor for total number of children.** If a mediator, literacy would at least partially account for any relationship seen between health and childbearing. If a moderator, the magnitude of association between health and childbearing would change in a non-linear manner based on levels of literacy and other independent variables (interaction). Evidence of mediation and/or moderation could support distinct explanations for how policies impacting literacy might influence childbearing.

We included all women not missing data on PIAAC literacy score, childbearing, or other covariates from 18 OECD and partner countries, including the United States. Across these countries, average PIAAC literacy score ranged from 250 (Spain) to 295 (Japan). Average total childbearing ranged from 1.2 (Russian Federation) to 1.8 (United States). For self-reported health, when the excellent, very good, and good categories were collapsed, between 45% (Republic of Korea) and 88% (the Czech Republic) fell into this category. Average age in the sample ranged from 39 (Ireland) to 42 (Italy and Japan).

Consistent with previous work there was a negative relationship between literacy and total childbearing (increasing literacy is associated with lower childbearing), in all countries except the Russian Federation. Furthermore, self-reported excellent/very good compared with good health was associated with increased childbearing and self-reported fair/poor compared with good health was associated with decreased childbearing. For each country, one of these two relationships (between excellent/good or fair/poor health and childbearing) was significant.

We found evidence that the relationship seen between self-reported health and childbearing varies in magnitude based on literacy status (moderation) in only two out of 18 countries (Slovak Republic $p=0.042$ and Spain $p=0.024$). In contrast, we found evidence that literacy explains (mediates) the relationship seen between self-reported health and total childbearing in all countries except for Norway, Denmark, and Belgium.

In summary, there was a consistent and significant negative relationship between literacy and the number of children per woman across all 18 OECD and partner countries. Additionally, these findings suggest that literacy plays a mediating rather than a moderating role between predisposing factors, in this case self-reported health, and total childbearing.

These findings provide additional support for literacy as a key variable influencing health outcomes at the national and international level. The place of literacy as an outcome of social and educational policy is critical to bear in mind as the processes influencing demographic changes are considered and interventions are developed to address any of these interrelated factors.