Who’s got the power? Expressions of empowerment among in-school adolescents enrolled in the Girls Achieve Power (GAP Year) trial in three peri-urban settings of South Africa [version 1; peer review: awaiting peer review]

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Abstract

**Background:** Empowerment is when a person gains mastery of their life and environment. This paper describes three central elements of empowerment (agency, resources, and institutional structures) expressed by adolescents, discussing implications for strengthening adolescent sexual reproductive health, HIV, and violence prevention programming.

**Methods:** A cross-sectional survey was conducted (April 2017 – May 2018) as part of the GAP Year trial among grade eight learners (12 – 18 years) from 26 lowest quintile public high schools in Khayelitsha, Soweto and Thembisa townships, South Africa. Data were on empowerment experiences using a knowledge, attitudes, and practices survey. Descriptive and chi-square test statistics were employed, assessing the association between sociodemographic and domains of empowerment.

**Results:** A total of 2383 adolescents in 26 schools completed the baseline survey: 63.1% female, mean age 13.7 years, 96.9% Black African. **Agency:** Males (4.04 vs 3.94, p=0.008) and those 15 – 18 years (4.10 vs 3.95, p=0.027) expressed stronger decision-making capacity. Females (3.18 vs 2.92, p<0.001) indicated a greater sense of collective action. Females (0.77 vs 0.72, p=0.008), those aged 12-14 years (0.76 vs 0.71, p=0.027) and those with at least one parent/guardian employed (p=0.014) had stronger leadership confidence. **Resources:** Those 12-14 years expressed higher self-esteem (2.18 vs 2.08, p=0.017). Males (2.24 vs 1.87, p<0.001) and those who had at least one parent/guardian employed (p=0.047) had a higher perception of freedom from gender-based violence. Males showed greater mobility.
Institutional structures: Coloured participants showed more positive norms than their Black counterparts (5.38 vs 2.12, p=0.005).

Conclusions: Males expressed greater empowerment around decision-making, gender-based violence and mobility; females expressed greater collective action and leadership. Working across the ecological model, interventions addressing sex differences, targeting adolescents of all ages, and parental unemployment may strengthen expressions of empowerment, especially adolescents' safety, mobility, aspirations, and future hopes.

Keywords
empowerment, learners, South Africa, adolescent girls and boys, GAP Year

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Introduction

Empowerment is a process of change where a person gains mastery over their life and environment. Gender empowerment is understood as the increase in women and girls’ capacities to make and influence choices that affect their lives and is a concept acknowledged to be fluid and subject to social norms. The nature and process of this empowerment should be defined and driven by women and girls themselves, therefore paths to empowerment are contextual, idiosyncratic and organic.

Globally, empowerment has been studied in the context of human immunodeficiency virus (HIV) prevention with a focus on equipping adolescent girls and young women with knowledge and skills to remain HIV-free. Other studies view education as a form of empowerment for girls. Furthermore, evidence shows that a majority of interventions for adolescent empowerment provide information on sexual and reproductive health (SRH) issues including HIV and AIDS, education, and adolescent self-efficacy.

Adolescence (ages 10–19 years) is a period of rapid and critical human development, creating opportunities to discover new things, form relationships with peers and adults, and explore one’s developing identity. During early adolescence, males’ and females’ lives start to diverge sharply in terms of independence, mobility, schooling, and domestic responsibilities. In sub-Saharan Africa, half of the population is estimated to be under 18 years old. Fast-paced urbanization in Africa has led to increased demand for resources such as health care services, employment and social welfare services for informal settlements and peri-urban areas. The limited resources are stretched, which can result in some population groups, such as adolescents and young women, being excluded from accessing these resources.

Women and girls’ empowerment has been associated with several positive economic and health indicators. Societies where girls and women are empowered tend to have accelerated economic development and higher Gross Domestic Products (GDPs), and empowerment can be protective against gender-based violence, especially in societies where gender equality is accepted. Dimensions of empowerment such as positive self-esteem have also been shown to be protective against HIV acquisition and unintended pregnancy. Empowerment of women and girls should not take place in isolation, as men and boys also experience the negative consequences of gender inequality, and can make powerful contributions to the achievement of equality. Thus, including men and boys in empowerment efforts is integral to achieving sustainable change for society as a whole.

Gender empowerment therefore has significant and measurable impact upon public health and is an effective and needed area of intervention. In South Africa (SA), the need for such intervention is strengthened further, particularly in the context of patriarchal gender norms placing females at risk because of the imbalance of power, high rates of gender-based violence (GBV) and high rates of HIV among adolescent girls and young women (AGYW). An estimated 40% of South African women have experienced intimate partner violence and 12–28% have been raped. In 2019, new HIV infections among women (15 years and over) in SA were more than double than those among their male counterparts.

This paper used a model of women and girls’ empowerment as constructed by the Bill and Melinda Gates Foundation as a theoretical basis, wherein empowerment consists of three central elements: agency (decision-making, collective action, leadership), resources (control over resources, gender-based violence, mobility, self-esteem) and institutional structures (norms) (Figure 1). This model of empowerment was developed in partnership with the Gender Team at the Royal Tropical Institute of the Netherlands (KIT). We have applied this empowerment model to both boys and girls.

Agency refers to an individual’s power to take action to pursue goals. This power depends partly on decision-making power, or how independently the person can make decisions and act on them. Collective action is when people stand together, mobilise and exercise their voice collectively to transform institutions and power relations: this is a powerful tool for social transformation. Leadership is another powerful expression of agency as people lead and inspire social change to improve the status of women and girls.

Resources focuses on an individual’s access to, and power to use, what is in their environment. Self-efficacy/self-esteem determines one’s level of empowerment, since being able to conceptualise a better future and feeling confident in one’s ability to take steps toward this future are integral to the ability to act. This also includes control over assets such as finances, means of communication, and the means to gain knowledge. There are contextual influences which may constrain one’s access to resources: for example, gender-based violence may function as a threat, a consequence, or a deterrent to taking certain actions. Connected to this is mobility, or the ability to move freely through spaces without the risk of violence.

Institutional structures are the broader social structures, both formal (e.g. school systems, community forums) and informal (e.g. cultural and media discourses) which empower or disempower an individual. The norms which originate in culture or religion may be difficult to contradict as they stem from deeply held beliefs. If someone does not conform to the norms of that community, their expressions of empowerment would be constrained.

This paper contributes to the growing body of evidence by describing the domains of empowerment expressed at baseline by adolescents enrolled in the GAP Year trial and discusses implications of these findings for strengthening adolescent SRH, HIV and violence prevention programming.

Methods

Study design and setting
A baseline cross sectional survey was conducted between April 2017 – September 2018 as part of the Girls Achieve
Power (GAP) Year cluster randomised controlled trial (cRCT). This paper presents the findings of 2383 participants who completed the knowledge, attitudes, and practices (KAP) baseline survey. In total, public high schools were selected across Soweto and Thembisa Townships in Gauteng Province (GP) and Khayelitsha Township in Western Cape Province (WC), South Africa. Site selection was done in collaboration with the Department of Education as well as using data to assess the burden of HIV, gender-based violence (GBV) and pregnancy rates.

Schools were the units of randomisation and were selected using the following criteria: mixed sex public high school in Thembisa, Soweto and Khayelitsha; in quintiles 1–3 which had not received any SRH and HIV prevention asset building interventions in the past six months. A one to one (1:1) stratified randomization scheme was employed to assign the 26 schools to intervention or control groups. GAP Year adapted and adopted the Good Participatory Practice Framework to guide stakeholder engagement throughout the lifecycle.

Sample size justification

The sample size was calculated based on the study’s primary outcome measures, namely dropout rate and increased reporting of GBV among adolescent girls, computed using cluster-randomized size methodology suggested by Hayes and Bennett. The effect size of dropout was factored from other similar studies to account for a large conservative and representative sample size to measure outcomes. Based on other local studies, we hypothesize a reduction in drop-out rate from 17.8% as reported by Branson, Hofmeyr to less than 14% (estimated effect size of 20%), with an anticipated attrition rate of 5% per year based on a similar local study. This resulted in a conservative sample size of 2730 adolescent girls and 1850 boys to determine the association between intervention and control school’s dropout rate and GBV variables across 26 schools. This was the upper limit for the sample size for the cRCT. For the cross-sectional study, we only included those who consented into the trial.

Study participants

All Grade eight learners at selected schools were eligible to participate in the baseline survey, irrespective of age, race, or sex, seeking to reduce selection bias. The age range in our sample was between 12 – 18 years, accounting for those who had repeated a grade. Potential participants were approached in their classrooms, given an overview of the GAP Year trial, and invited to participate. Only those with written parental/guardian consent and written individual assent were recruited into the study.

Measures

The baseline interview consisted of two parts: an interviewer-administered survey and an audio computer-assisted self-interview (ACASI). The interviewer-administered survey,
between 40 – 60 minutes in duration, collected data on demographics, socio-economic status and knowledge and attitudes pertaining to school safety, social support and social networks, sexuality, gender and norms, sexual reproductive health and rights (SRHR) and care-seeking behaviours. Questions on empowerment (Table 1) explored decision-making, collective action, leadership, mobility, GBV, control over assets, self-esteem, and norms, aligning to the 8 empowerment domains. Once this component was complete, the participant went on to complete the behavioural ACASI part, allowing learners to hear questions through headphones and respond on a tablet themselves, aiming to reduce social desirability bias. The ACASI section, 20–30 minutes in duration, asked sensitive questions about the participant’s actual practices and behaviour, covering questions on multiple sexual partners, sexual history, substance abuse (alcohol, drugs) and experiences of different types of violence. The majority did the interviewer-administered survey first, although this was not always the case. Data collection took place in a school classroom, during or after school hours, depending on the approval from the School Principal. Interviewers were trained in data collection, human research ethics and the study protocol prior to data collection and had no previous relationship with the participants. Data collection did not require audio or visual recording and no field notes were taken. All study materials including the surveys can be found as extended data[20].

Data management and analysis

Data were collected and managed using REDCap (Research Electronic Data Capture) electronic data capture tools hosted at the University of the Witwatersrand[21,22]. REDCap is a secure, web-based software platform designed to support data capture for research studies. Completed surveys were stored on encrypted password-protected tablets and the synced data was stored on Wits RHI secured servers. All data from REDCap and ACASI systems were exported as csv files and then into StataCorp 2017[23]. Descriptive and chi-square test statistics were used to summarize the data using Stata version 15.

Empowerment scores were created to assess each of the eight empowerment domains. Scores were computed using key questions asked in the survey. A positive response to each question was scored a 1 and a negative response was scored a zero. The final score for each empowerment domain was then calculated based on the sum of the positive responses. Given that each domain had a different number of questions, the highest attainable scores for each empowerment domain differ (Table 1). Each selected question carried equal weight in the creation of the respective score. Therefore, a higher score denotes a higher level of empowerment for each of the 8 domains, while a low score indicates a low level of empowerment. Lowest and highest score bands are shown in Table 1. For example, in Table 1, there are 5 questions related to decision-making. As such, a score of 5 means that the respondent has the highest level of positive decision-making. In the results, we present empowerment scores using the highest level of empowerment, top score category. Means and their standard deviations as well as frequency and percentage distributions are shown for each of the 8 empowerment domains for each of the selected socio-demographic factors, by sex, age, and province. This is to assess differences in the level of empowerment allows for an overview of the distribution of those scoring low, average, and high for each of the scores, and assists in the assessment of differences and variation amongst sub-groups. It should also be noted that the “no” category has been removed for all dichotomous variables [variables with a Yes or No Response] shown in the Tables in the results.

This paper presents a cross-sectional analysis of participants who completed the baseline knowledge survey, focusing on the 3 central elements and 8 domains of empowerment with questions under each to explore participant experiences (Table 1).

To date, there is one other publication from the GAP Year baseline data, exploring the experiences of violence among grade eight learners[24].

Ethical approval and considerations

The study was granted ethical approval from the University of the Witwatersrand Human Research Ethics Community (#M160940). The Western Cape Department of Education and Gauteng Department of Education provided provincial research approval. Learners’ enrolment and participation was voluntary. Only those with written parental/guardian consent and written individual assent were recruited into the study at the beginning of the trial before data collection started. Those who were 18 years and older, did not require parental/guardian consent but provided their own written consent, enabling them to participate. Initially in English, the survey was translated and back translated into isiXhosa, commonly spoken in some study sites. All data collection was supervised by the research team. Interviewer environments were set up to ensure confidentiality. Where possible, interviewers were the same sex as the participant. During the study, participants were free to refuse to respond to any question(s) they felt uncomfortable answering. Social workers were employed to provide psychosocial support to participants during data collection and study intervention and a social harm reporting form was developed to facilitate prompt referrals where needed. To ensure meaningful participant and stakeholder engagement, the study was guided by the Good Participatory Practice guidelines[25].

Results

Overall, 3432 eligible learners across 26 schools participated in the baseline survey; 2383 are included in this analysis as they completed both components of the survey[26]. In some cases, due to lack of time, some learners were unable to complete both components. The n value varies for each of domains as this reflects those who answered all the questions in that domain. For example, for decision-making, only 1 316 learners responded to all 5 questions in this domain. Table 2 provides the socio-demographic characteristics of the participants
### Table 1. Construction of empowerment scores, by central element.

| Central Element 1: Agency |
|---------------------------|
| Decision-Making [Score: 0-5] |
| 1 I feel I can achieve a specific task or accomplishment |
| 2 When I find a solution, I can make it into an action |
| 3 My family is willing to help me make decisions |
| 4 I feel comfortable to ask questions (at healthcare facility) |
| 5 I am confident that I can insist on condom use every time I have sex |

| Collective Action [Score: 0-4] |
|--------------------------------|
| 1 I feel I am supported by other girls/ boys to make good decisions |
| 2 I belong in formal and informal social group (e.g. Youth club) |
| 3 There is a person with whom I can share my joys and sorrows |
| 4 I can count on my friends when things go wrong |

| Leadership [Score: 0-1] |
|-------------------------|
| 1 I consider myself to be a leader in my community |

| Central Element 2: Resources |
|-------------------------------|
| Self -Esteem [Score: 0-3] |
| 1 I feel as intelligent as most young people of my age |
| 2 My life has value |
| 3 I have hope for my future |

| Control over Assets [Score 0-3] |
|---------------------------------|
| 1 I feel I have the ability to act on my own to make free choices |
| 2 In the past year, I have saved or put money aside to use later |
| 3 I make good decisions concerning how to manage my money |

| GBV [Score: 0-3] |
|-------------------|
| 1 I don't know girls in my neighbourhood that have been raped or sexually assaulted |
| 2 I feel that I will **not** be raped |
| 3 I have never been threatened in school |

| Mobility [Score: 0-4] |
|-----------------------|
| 1 I have the freedom to move between spaces (home, school and community) without the threat of violence |
| 2 I feel safe walking around in my neighbourhood/community during the day |
| 3 There is a place in my community, that is not my house, my friend's house, or my school, where I feel safe to meet my friends |
| 4 I feel safe walking alone in my neighbourhood |

| Central Element 3: Institutional Structures |
|--------------------------------------------|
| Norms [Score: 0-8] |
| 1 In my community women are not seen as objects of possession |
| 2 Boys play a role in empowering women |
| 3 I think girls can negotiate condom use |
| 4 I think a girl can suggest to her boyfriend that he use a condom |
| 5 Having a **blesser** is discouraged in my community |
| 6 When money is scarce, and parents cannot send all children to school, boys and girls should have equal opportunities to go to school |
| 7 Girls can make as good leaders as boys |
| 8 Men have enough self-control to choose not to rape girls |

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2 Described as someone, usually an older man with a lot of money, who provides things like money, expensive gifts and luxurious trips to young women in exchange for company or sexual favours. 33. Choma. What is a **blesser**? 2020 [Available from: https://choma.co.za/articles/284/what-is-a-blesser.]

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### Table 2. Socio-demographic factors by empowerment scores.

|                          | AGENCY | RESOURCES | INSITUTIONAL STRUCTURES |
|--------------------------|--------|-----------|-------------------------|
|                          | Decision Making | Collective Action | Leadership | Self-Esteem | Control Over Assets | GBV | Mobility | Norms |
| **Score Range**          | 0–5    | 0–4       | 0–1        | 0–3        | 0–3          | 0–4    | 0–8      |
| % [N]                   | Mean [SD] | Mean [SD] | Mean [SD] | Mean [SD] | Mean [SD] | Mean [SD] |
| **Sex**                 |        |           |            |            |             |        |
| Female                  | 63.1 (1 504) | 3.94 [0.94] | 3.18 [0.87] | 0.77 [0.42] | 2.15 [0.82] | 2.34 [0.76] | 1.87 [0.84] | 2.66 [1.02] | 5.13 [1.42] |
| Male                    | 36.9 (879) | 4.04 [0.89] | 2.92 [0.92] | 0.72 [0.45] | 2.18 [0.77] | 2.44 [0.72] | 2.24 [0.80] | 2.89 [0.98] | 5.12 [1.44] |
| Total                   | 100% [2 383] | 3.99 [0.90] | 3.07 [0.90] | 0.75 [0.43] | 2.16 [0.80] | 2.41 [0.75] | 2.01 [0.85] | 2.75 [1.01] | 5.12 [1.42] |
| **Age Category**        |        |           |            |            |             |        |
| 12–14 Years             | 81.4 (1 938) | 3.95 [0.93] | 3.10 [0.90] | 0.76 [0.43] | 2.18 [0.79] | 2.41 [0.75] | 2.00 [0.84] | 2.76 [1.00] | 5.11 [1.43] |
| 15–18 Years             | 18.6 (443) | 4.10 [0.90] | 3.01 [0.90] | 0.71 [0.45] | 2.08 [0.83] | 2.40 [0.74] | 2.05 [0.87] | 2.69 [1.06] | 5.19 [1.41] |
| **Mean Age [SD]**       | 13.7 [0.95] | 3.02 [0.91] | 3.00 [0.90] | 0.75 [0.43] | 2.16 [0.80] | 2.41 [0.75] | 2.01 [0.85] | 2.75 [1.01] | 5.12 [1.42] |
| **Population Group**    |        |           |            |            |             |        |
| Black                   | 96.9 (2 309) | 3.98 [0.92] | 3.08 [0.90] | 0.75 [0.43] | 2.16 [0.80] | 2.41 [0.75] | 2.01 [0.85] | 2.75 [1.01] | 5.12 [1.42] |
| Coloured                | 3.1 (74) | 4.00 [0.99] | 3.21 [0.90] | 0.74 [0.44] | 2.21 [0.67] | 2.31 [0.80] | 2.04 [0.80] | 2.88 [0.95] | 5.38 [1.53] |
| **Household structure** |        |           |            |            |             |        |
| Both parents            | 41.4 (967) | 4.00 [0.92] | 3.14 [0.86] | 0.74 [0.44] | 2.18 [0.80] | 2.40 [0.75] | 2.02 [0.84] | 2.72 [1.02] | 5.13 [1.46] |
| Single parent           | 58.6 (1 332) | 4.01 [0.90] | 3.01 [0.93] | 0.76 [0.43] | 2.16 [0.79] | 2.41 [0.74] | 2.00 [0.85] | 2.77 [1.00] | 5.11 [1.39] |
| Relative/ guardian      | 9.3 (214) | 3.90 [0.97] | 3.14 [0.91] | 0.77 [0.42] | 2.13 [0.82] | 2.43 [0.74] | 2.00 [0.85] | 2.77 [1.00] | 5.19 [1.42] |
| Parent/ Guardian Employed[1] | 68.8 (1 633) | 3.96 [0.89] | 3.10 [0.90] | 0.74 [0.44] | 2.13 [0.82] | 2.39 [0.78] | 2.03 [0.83] | 2.76 [1.00] | 5.11 [1.42] |
| Parent/ guardian Receives a Grant | 67.3 (1 498) | 3.99 [0.90] | 3.10 [0.90] | 0.75 [0.43] | 2.15 [0.82] | 2.39 [0.76] | 1.98 [0.84] | 2.73 [1.04] | 5.13 [1.40] |
by empowerment scores: the majority (63.1%) were female, 81.4% were aged 12 – 14 years and 96.9% were Black African. Approximately one-fifth (18.6%, n=443) were aged 15–18 years, 76% (n=337) of which have repeated a grade. Overall, 41% lived with both parents while the majority (68.8%) had at least one parent/guardian employed, and 67.3% of households received a government grant. We will reflect on the three central elements in turn (Table 2).

**Agency**
Overall, there were differences in agency across some scores in sex, age, household structure and parent/guardian employment status. When it comes to decision-making, males (4.04 vs 3.94, p=0.040) and those 15 – 18 years (4.10 vs 3.95, p=0.027) expressed more decision-making capacity compared to females and the younger age group. Females indicated a stronger sense of solidarity, support and shared sense of identity and confidence from working together (collective action) (3.18 vs 2.92, p=0.001) and stronger leadership confidence than their male counterparts (0.77 vs 0.72, p=0.008). Leadership was also impacted by age and parental/guardian employment status: those aged 12 -14 years (0.76 vs 0.71, p=0.027) and those with at least one parent/guardian employed (p=0.014), showed a stronger leadership confidence than those in the older age group or those whose parents/guardians were unemployed.

**Resources**
The significant demographic factors related to resources were sex, age, parent/guardian employment status and if parent/guardian receives a grant. Those aged 12–14 years expressed higher self-esteem (2.18 vs 2.08, p=0.017) than their older counterparts. There were no significant demographic factors for control over assets. Males (2.24 vs 1.87, p<0.001), those who had at least one parent/guardian employed (p=0.047) or if their parent/guardian received a grant (p=0.003) felt they have a greater sense of freedom from GBV. Males showed greater mobility (2.89 vs 2.66, ps<0.001) than females.

**Institutional structures**
Participant population group was found to be statistically significant in relation to norms with Coloured participants more likely to show more positive norms than their Black counterparts (5.38 vs 2.12, p=0.005).

**Provincial differences**
When we analysed empowerment domains by Province, there were significant provincial differences across 3 domains of empowerment: decision-making, collective action and mobility (Table 3). Participants in WC expressed the greatest sense of support, a shared sense of identity and confidence from working with others (collective action) (42.3% vs 37.2%, p=0.026), compared to their Gauteng counterparts. Participants in GP indicated a greater freedom to move around safely in their community (mobility) (28.0% vs 18.6%, p<0.001).

**Discussion**
In this exploration of in-school adolescent expressions of empowerment across Gauteng and Western Cape, South Africa, we found that there were sex, age, parental/guardian employment and provincial differences in expressions of empowerment. Each of these will be discussed in turn.

Males in this study expressed a greater sense of empowerment around decision-making, GBV and mobility, while females expressed a greater sense of collective action and leadership. The sex differences we noted can be confirmed by other studies, indicating that females are less empowered than their male counterparts. Of note, females indicated higher anxiety and threat of GBV compared to males. This confirms recent findings from other South African literature, detailing the multiple risks and experiences of violence that women face daily. In contrast, females noted stronger collective action and leadership confidence. Collectively, adolescents showed high levels of empowerment; however, for almost 20% of participants, feelings of self-worth and future aspirations were low across both sexes. Whilst low self-esteem can be temporary, analysis has shown that it can have long-lasting impacts on their resilience, mental health, risky sexual behaviours and performance at school, especially for South African adolescents who face many health and well-being challenges. This indicates the urgent need for mental health and psychosocial services for adolescent males and females in high schools to support them through this stage of adolescence, giving them a hope for the future. Career guidance could also be strengthened at school level as research suggests that having career aspirations can have a positive impact on adolescent health and wellbeing.

Expressions of empowerment varied across the different stages of adolescence: most significantly, younger adolescents (aged 12–14 years) expressed stronger collective action, leadership and self-esteem than their older counterparts. These findings suggest that future empowerment interventions should target the full spectrum of adolescents aged 10–19 years, to ensure that the physical, cognitive, emotional and social changes of early adolescent development are taken into consideration when developing empowerment interventions.

Interesting provincial differences were also noted; WC learners were found to have stronger expressions of empowerment, compared to GP learners, specifically around decision-making and collective action. GP learners indicated greater mobility compared to WC learners: this is confirmed by Burton and Leoschut in their study on school and community violence. They found that 18.5% of learners in WC reported threats of violence restricting their mobility: Gauteng was ranked the lowest at 9.0%. Moreover, the WC is known for its high rates of gang violence, impacting safety and mobility particularly within the study site of Khayelitsha. One explanation for this provincial difference could be that Gauteng townships, specifically Soweto, were more formally planned and urbanised, with more formal infrastructure, compared to that of Khayelitsha, WC.

We also found that parental employment, and if parent/guardian received a government grant, impacted adolescent empowerment in a variety of different ways; however, these
Table 3. Comparison of empowerment scores by province.

|                | Western Cape | Gauteng | Total  |
|----------------|--------------|---------|--------|
|                | % (N)        | % (N)   | % (N)  |
| **AGENCY**     |              |         |        |
| Decision Making|              |         |        |
| 0              | 0.0 (0)      | 0.0 (0) | 0.0 (0) |
| 1              | 1.1 (6)      | 1.7 (13)| 1.4 (19)|
| 2              | 4.2 (22)     | 5.8 (46)| 5.2 (68)|
| 3              | 17.7 (93)    | 20.9 (165)| 19.6 (258) |
| 4              | 43.8 (231)   | 40.4 (319)| 41.8 (550) |
| 5              | 33.2 (175)   | 31.2 (246)| 32.0 (421)|
| **Total**      | 100 (527)    | 100 (789)| 100 (1,316) |
| *p=0.051, \chi^2=3.28 | | | |
| **Mean [sd]**  | 4.04 [0.88]  | 3.94 [0.95] |        |
| Collective Action|            |         |        |
| 0              | 0.2 (2)      | 0.4 (5) | 0.3 (7) |
| 1              | 3.9 (38)     | 5.0 (58)| 4.5 (96)|
| 2              | 20.7 (203)   | 21.3 (246)| 21.00 (449) |
| 3              | 33.0 (324)   | 36.1 (417)| 34.7 (741) |
| 4              | 42.3 (415)   | 37.2 (430)| 39.5 (845) |
| **Total**      | 100 (982)    | 100 (1156)| 100 (2,138) |
| *p=0.026, \chi^2=0.57 | | | |
| **Mean [sd]**  | 3.13 [0.87]  | 3.05 [0.91] |        |
| Leadership     |              |         |        |
| 0              | 26.0 (282)   | 23.8 (301)| 24.8 (583) |
| 1              | 74.0 (803)   | 76.2 (964)| 75.2 (1,767) |
| **Total**      | 100 (1,085)  | 100 (1,265)| 100 (2,350) |
| *p=0.219, \chi^2=1.02 | | | |
| **Mean [sd]**  | 0.74 [0.44]  | 0.76 [0.43] |        |
| **RESOURCES**  |              |         |        |
| Self-Esteem    |              |         |        |
| 0              | 3.1 (33)     | 3.1 (39)| 3.1 (72) |
| 1              | 13.9 (150)   | 17.6 (221)| 15.9 (371) |
| 2              | 43.7 (472)   | 41.8 (526)| 42.7 (998) |
| 3              | 39.4 (425)   | 37.5 (472)| 38.4 (897) |
| **Total**      | 100 (1,080)  | 100 (1,258)| 100 (2,338) |
| *p=0.091, \chi^2=1.07 | | | |
| **Mean [sd]**  | 2.19 [0.79]  | 2.14 [0.81] |        |
| Control Over Assets|         |         |        |
| 0              | 1.6 (16)     | 2.4 (29)| 2.0 (45) |
| 1              | 10.2 (103)   | 9.5 (115)| 9.8 (218) |
| 2              | 32.5 (329)   | 34.0 (411)| 33.3 (740) |
| 3              | 55.7 (563)   | 54.1 (655)| 54.8 (1,218) |
| **Total**      | 100 (1,011)  | 100 (1,210)| 100 (2,221) |
| *p=0.433, \chi^2=0.83 | | | |
| **Mean [sd]**  | 2.42 [0.74]  | 2.40 [0.76] |        |
| GBV            |              |         |        |
| 0              | 4.7 (51)     | 5.1 (65)| 4.9 (116) |
| 1              | 19.5 (213)   | 21.4 (271)| 20.5 (484) |
| 2              | 44.4 (486)   | 42.2 (536)| 43.3 (1,022) |
| 3              | 31.4 (344)   | 31.3 (397)| 31.2 (741) |
| **Total**      | 100 (1,094)  | 100 (1,269)| 100 (2,363) |
| *p=0.395, \chi^2=0.76 | | | |
| **Mean [sd]**  | 2.03 [0.83]  | 2.00 [0.86] |        |
| Mobility       |              |         |        |
| 0              | 3.1 (27)     | 2.3 (24)| 2.7 (51) |
| 1              | 11.9 (104)   | 8.3 (86)| 9.9 (190) |
| 2              | 25.9 (227)   | 17.0 (177)| 21.1 (404) |
| 3              | 40.5 (354)   | 44.4 (463)| 42.6 (817) |
| 4              | 18.6 (163)   | 28.0 (292)| 23.7 (455) |
| **Total**      | 100 (875)    | 100 (1,042)| 100 (1,917) |
| *p<0.001, \chi^2=0.97 | | | |
| **Mean [sd]**  | 2.60 [1.02]  | 2.88 [0.99] |        |
| INSTITUTIONAL STRUCTURES|       |         |        |
| Norms          |              |         |        |
| 0              | 0.2 (2)      | 0.0 (0)| 0.1 (2) |
| 1              | 0.9 (9)      | 1.23 (15)| 1.1 (24) |
| 2              | 3.0 (30)     | 2.5 (30)| 2.7 (60) |
| 3              | 8.6 (86)     | 9.6 (117)| 9.2 (203) |
| 4              | 17.5 (175)   | 19.0 (231)| 18.3 (406) |
| 5              | 23.5 (235)   | 26.6 (324)| 25.2 (559) |
| 6              | 29.0 (290)   | 25.6 (311)| 27.1 (601) |
| 7              | 15.0 (150)   | 12.7 (155)| 13.8 (305) |
| 8              | 2.30 (23)    | 2.8 (34)| 2.6 (57) |
| **Total**      | 100 (1,000)  | 100 (1,217)| 100 (2,217) |
| *p=0.151, \chi^2=1.64 | | | |
| **Mean [sd]**  | 5.18 [1.43]  | 5.09 [1.42] |        |

* = P-value for Scores as Categorical Domains, SD=standard deviation
results are conflicting. National government-led developments and interventions addressing parental unemployment and economic constraints at a household level may be one vital way to increase expressed adolescent empowerment\(^3\). Parent and guardian interventions should also be prioritised so adolescents can be supported at home, positively impacting their health and wellbeing.

Overall, there were only significant differences in institutional structures in relation to population groups. However, we know that the structure of persistent gender relations and ensuing power dynamics means that some people, particularly women, are less empowered and capable of negotiating protection with partners than others. Whilst it is encouraging that adolescents in this cohort display some positive norms, further work is needed to tackle harmful, deeply rooted gender and cultural norms to ensure greater empowerment for females across South Africa\(^{54-56}\).

Future research should explore why adolescent males and females feel worthless and lack hope, so interventions can address the root causes of these feelings. Learners and their guardians can then be formally linked to relevant support interventions (such as social or community support, grants, or work readiness training to increase employment opportunities), which have the potential to increase their school completion and future aspirations. Evidence-based GBV prevention interventions for adolescents and children should be researched and implemented to tackle gender norms at an individual, community and societal level, starting from a young age. Also recommended are interventions for adolescent females that improve their decision-making capacity, collective action, self-esteem and continue to develop their leadership skills as these would be critical to narrow the empowerment gender gap. These components could be strengthened in the Life Orientation curriculum in schools. We analysed all domains of empowerment equally, however, future analysis could explore a weighted analysis, ensuring more important domains are weighed more heavily.

Existing school and community interventions seeking to create a more enabling environment\(^7\) should be intensified to create safer spaces and improve adolescents’ mobility in community and public spaces. Future interventions should adopt gender-transformative approaches, seeking to reshape gender relations to be more gender equitable, freeing adolescents, including LGBTIQ+ individuals, from the impact of destructive gender and sexual norms\(^{96}\). All genders need to be included in efforts to reach the United Nations’ Sustainable Development Goal number 5\(^3\).\(^{58} \)\(^3\), and to reduce the empowerment gender gap displayed here and in other research\(^7\).\(^{60-62}\).

Strengths and limitations
This study has some strengths and limitations which should be considered. The main strength of this study is that it was conducted in 26 schools in three highly populated, diverse townships of South Africa and is therefore generalisable to other South Africa settings. However, the study was cross-sectional, therefore only representing one point in time. It should be acknowledged that the scores only show small differences and are quite similar to one another. However, given the size of the sample, although the differences between the scores are similar, these are still significant and worth noting that even small differences have an influence on the adolescents’ sense of empowerment. These limitations should not significantly influence the validity of the findings.

Conclusions
These results provide important contributions to understanding adolescent empowerment. Findings suggest that interventions tackling unequal gender norms, GBV prevention, self-esteem and self-worth should target both males and females from a young age. Addressing sex differences in empowerment and parent unemployment issues that are pervasive in South Africa, may strengthen expressions of empowerment for adolescents, especially adolescent females. The Life Orientation curriculum for very young adolescents should include key messaging to improve dimensions of empowerment at this foundation phase where the constructs of empowerment are laid. Working across all levels of the ecological model, these interventions would improve adolescent’s safety, mobility, future aspirations, and their hope for the future.

Data availability
Underlying data
Harvard Dataverse: GAP Year_Empowerment REDCap and ACASI data. https://doi.org/10.7910/DVN/0ON2UX\(^7\)\(^0\).

This project contains the following underlying data:
- GAP Year Baseline Empowerment Data.tab
- GAPYear_REDCap Codebook.pdf
- GAP Year_ACASI Boys Survey Codebook.pdf
- GAP Year_ACASI Girls Survey Codebook.pdf

Extended data
Harvard Dataverse: GAP Year_Empowerment REDCap and ACASI data. https://doi.org/10.7910/DVN/0ON2UX\(^7\)\(^0\).

This project contains the following extended data:
- GAP Year Boys ACASI Survey Questionnaire.pdf
- GAP Year Girls ACASI Survey Questionnaire.pdf
- GAP Year Boys REDCap Survey Questionnaire.pdf
- GAP Year Girls REDCap Survey Questionnaire.pdf
- Combined Information Sheet and IC forms.pdf

Data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication).
Consent
Written informed consent for publication of the participants’ details was obtained from the participants and their parents/guardians.

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